RIT

Official Bulletin

General Information and

Undergraduate Programs 1984-85

Rochester Institute of Technology
Rochester, N.Y.

Rochester Institute of Technology
1984-85 Institute Calendar

• FALL QUARTER

July 9 - August 10	*CCE Mail-in Registration
July 9 - August 24	CCE Walk-in Registration
August 29 - 30	CCE Open Registration
September 2	Move-in Day for New Resident Students
September 3 - 4	Orientation for New Students
September 5	First Day of Classes (CCE)
September 5	Day College Open Registration (New Students)
September 6	Day College Open Registration (Returning Students)
September 7	First Day of Classes (Day College)
September 7	Non-matriculated Students (Day College Registration)
September 12	Physical Education Registration
October 26	Last Day to Withdraw with a Grade of "W"
November 15	Last Day of Classes (Day College)
November 16, 17, 19, 20	Exam Week
November 20	Last Day of Classes (CCE)
November 21 - 25	Fall/Winter Break

• WINTER QUARTER

October 22 - Nov. 2	*CCE Mail-in Registration
October 22 - Nov. 16	CCE Walk-in Registration
November 19 -20	CCE Open Registration
November 26	First Day of Classes (CCE)
November 26	Day College Open Registration
November 27	First Day of Classes (Day College)
November 27	Non-matriculated Students (Day College Registration)
December 6	Physical Education Registration
December 21	Last Day of Classes Before Break
January 3	Classes Resume
February 1	Last Day to Withdraw with a Grade of "W"
February 5	Teaching Effectiveness Conference (No Day College Classes)
February 19	Last Day of Classes (Day College)
February 20 - 23	Exam Week
February 23	Last Day of Classes (CCE)
February 24 - March 3	Winter/Spring Break

• SPRING QUARTER

January 28 - February 8	*CCE Mail-in Registration
January 28 - February 22	CCE Walk-in Registration
February 26 - 27	CCE Open Registration
March 4	First Day of Classes (CCE)
March 4	Day College Open Registration
March 5	First Day of Classes (Day College)
March 5	Non-matriculated Students (Day College Registration)
March 8	Physical Education Registration
April 26	Last Day to Withdraw with a Grade of "W"
May 13	Last Day of Classes (Day College)
May 14-17	Exam Week
May 18	Last Day of Classes (CCE)
May 18	Commencement
May 19-27	Spring/Summer Break

• SUMMER QUARTER

April 22 - May 3	*CCE Mail-in Registration
April 22 - May 17	CCE Walk-in Registration
May 20, 21	CCE Open Registration
May 28	Day College Open Registration
May 28	First Day of Classes (CCE)
May 29	First Day of Classes (Day College)
May 29	Non-matriculated Students (Day College Registration)
June 3	Physical Education Registration
July 4	Holiday (no Classes
July 19	Last Day to Withdraw with a Grade of "W"
August 8	Last Day of Classes (Day College)
August 9, 10, 12	Exam Week
August 12	Last Day of Classes (CCE)

***CCE- College of Continuing Education**

Dates of various summer sessions will be announced

Published by the Office of the Registrar

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, modifications 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. The compliance officer is James Papero.

General Information and Undergraduate Study 1984-85

Produced by RIT Communications

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

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RIT at a Glance

Location
Two campuses: one in the suburbs and the other, City Center, in downtown Rochester. The greater Rochester area has a population of about 700,000 and offers diverse cultural, social, and athletic opportunities.

Type

Private, coeducational, non-sectarian.

Orientation
Science, technology, the fine and graphic arts, management, selected social professions, with strong emphasis on professional competency.

Size
Full-time equivalency enrollment in fall, 1983, was 10,705 students.

Calendar
RIT operates on the quarter plan, each quarter being 11 weeks in duration. Many classes also are available during the summer (see current summer sessions bulletin).

Degrees
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).

Housing
Residence halls for over 3,400 students, with on-campus apartments and townhouses for upperclass students.

Sports
Full intercollegiate sports schedule, as well as intramural and recreational programs; facilities include indoor ice rink and pool.

Other cocurricular activities
Fraternities, sororities, professional and honorary societies, special interest clubs, service organizations.

Alumni
More than 45,000 in all 50 states and worldwide.

Placement
The Institute makes every effort to help students find employment, both during school and after graduation. The Center for Cooperative Education and Career Services acts in four principal areas as a liaison between employers and those students seeking positions. These areas include: part-time jobs, summer work, cooperative employment, and permanent employment for senior students and alumni.

Accreditation
The Institute 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. Specific mention of these is included in the college descriptions, where applicable.

What Is RIT?

With a history of more than 150 years, Rochester Institute of Technology is a privately endowed, co-educational, non-sectarian major institute of higher education. Its principal task is preparing students for technological and managerial competence in a world of change.

RIT is composed of nine colleges: Applied Science and Technology, Business, Continuing Education, Engineering, Fine and Applied Arts, Graphic Arts and Photography, Liberal Arts, Science, and the federally-funded National Technical Institute for the Deaf.

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: packaging science, nuclear medicine technology, printing, photographic science, the programs of the School for American Craftsmen and the previously-mentioned National Technical Institute for the Deaf (NTID).

Many of the programs are co-op, a formal program of campus 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. During the past academic year, over 2,000 students in business, engineering, science, engineering technology, printing and computer science and technology alternated academic quarters with work quarters during their last two or three undergraduate years.

RIT's students reflect the diversity of its programs. They come from almost every state in the union and many foreign countries. More than 45 percent transfer from two-year colleges or other four-year institutions. Older and part-time students compose a greater and greater proportion of the total enrollment.

The percentage of women also is increasing: today about a third of the Institute's students are female.

An increasing number of RIT alumni are entering graduate schools, but an RIT education helps many graduates move directly into professional occupations.

RIT continues to place basic emphasis upon teaching and research as the essential responsibilities of the faculty. In support of this are such activities as an Institute Committee on Effective Teaching, individual and group projects to improve teaching productivity and collegiate support for faculty who engage in business and industrial research.

RIT's campus in suburban Rochester occupies 400 acres on a 1,300 acre site. It houses complete

academic and sports facilities, including an indoor ice rink and swimming pool. The academic/ administrative complex of 15 buildings, which has received several architectural awards, is arranged as three adjacent quadrangles. The residential complex of 16 interconnected buildings is reached by a quarter-mile mall past tennis courts and playing fields. Adjacent to the residential area is the NTID academic/residence complex.

Many of the Institute's full-time day students live in Institute-operated residence halls. Four apartment villages with a total of 659 units house upperclass students.

The Institute maintains its City Center at 50 West Main Street in downtown Rochester. There the College of Continuing Education offers day and evening courses in which students pursue a range of aspirations from hobbies to master's degrees. Graduate painting and art education are also located here. More than 1,200 students are currently advancing their educational, vocational, and avocational objectives at the City Center. Besides its curricular uses, the City Center provides many technical and community service programs and houses the School of Applied Industrial Studies.

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 five years later, RITs seventh president, Dr. M. Richard Rose, continues to articulate 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."

Undergraduate Programs	**Degree and HEGIS* Code**				
	AS	**AAS**	**BFA**	**BS**	**BTech**
College of Applied Science and Technology					
Audiovisual Communications				0605	
Civil Engineering Technology					0925
Computer Information Systems		5101			0701
Computer Science		5101		0701	
Computer Technology		5399			0925
Electrical Engineering Technology					0925
Energy Engineering Technology					0925
Food Service Management		5404		1307	
General Dietetics & Nutritional Care		5404		1306	
Manufacturing Engineering Technology					0925
Mechanical Engineering Technology					0925
Packaging Science				4999	
College of Business					
Accounting		5002		0502	
Business Administration		5001		0506	
Business Administration—Information Systems				0599	
' Photographic Marketing Management		5004		0509	
Retailing		5004		0509	
College of Engineering					
Computer Engineering				0999	
• Electrical Engineering				0909	
Industrial Engineering				0913	
Mechanical Engineering				0910	
Microelectronic Engineering				0999	
College of Fine and Applied Arts					
Ceramics and Ceramic Sculpture		5610	1009		
Double Craft Major			1009.		
Graphic Design		5012	1009		
Industrial and Interior Design		5012	1009		
Fine Arts—Medical Illustration			1299		
Fine Arts—Painting, Printmaking		5610	1002		
Glass		5012	1009		
Metal Crafts and Jewelry		5012	1009		
Packaging Science				4999	
Weaving and Textile Design		5012	1009		
Woodworking and Furniture Design		5012	1009		
College ol Graphic Arts and Photography					
Biomedical Photographic Communications		5299		1217	
Film and Television		5007		1010	
Imaging and Photographic Sciences		5007		1011	
Newspaper Production Management				0699	
Photographic Processing & Finishing Management		5007		0599	
Printing		5009		0699	
Printing and Applied Computer Science				0699	
Printing Systems Management				0699	
Professional Photographic Illustration		5007	1011		
Technical Photography		5007		1011	
College of Liberal Arts					
Criminal Justice				2105	
Social Work				2104	
Economics (State approval pending)					
College of Science					
Applied Mathematics	5617			1703	
Biology	5604			0401	
Biomedical Computing	··			.1217	
Biotechnology				0499	
Chemistry	5619			1905	
Computational Mathematics				1703	
Diagnostic Medical Sonography (Ultrasound)	··			1299	
Diagnostic Medical Sonography (Ultrasound) 5299					
Medical Technology				1223	
Nuclear Medicine Technology	··			1299	
Physics	5619			1902	
National Technical Institute for the Deaf					
Interpreting (for the hearing-impaired)		5506			

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 Education General Information Survey

"Students in these programs receive an AS in General Science 1HEGIS 4902) upon successful completion of the first two years

NOTE: For information on offerings of the **College of Continuing Education,** or the **National Technical Institute (or the Deaf,** please write to that respective college for its Official Bulletin or catalog.

RIT Proud of Link With Rochester Dr. Rose Asserts

"RIT means access to employment and significant contributions to the community for thousands of young people and adults," says President M. Richard Rose. "For those of us who work and study here, RIT is a dynamic and progressive university that always has been willing to take those extra steps necessary to maintain relevant career and professional programs.

"RIT continues to provide opportunities for its alumni to improve themselves and their families educationally, professionally, financially and socially.

"In many ways, RIT also symbolizes much of what we find so desirable about our community, particularly through its attractive blend of tradition, culture, innovation, business and education.

"In many ways RIT has grown hand-in-hand with greater Rochester itself. Its very roots are in the area's early industry, and we share the city's pride in 1984, its sesquicentennial year. Our link to business and industry can be seen in our broad array of evening courses, focused on assisting individuals in career advancement.

"This link with greater Rochester's history and growth also makes RIT a special place for the entire community. It's a link of which we're very proud. We hope you will share in this pride as RIT provides access to the future."

Student Body Characterized By Diversity

There is no typical RIT student. If the student body could be characterized, however, it would be only by its diversity.

Some of our students have just graduated from high school. Some are transferring to RIT after going to college somewhere else. Some are returning to college after a long period o1\time.

RIT is an institute where painters, potters and photographers go to school with accounting majors; where those interested in a career in social work study with those interested in mechanical engineering.

Students have entered RIT from every state in the United States and from many foreign countries. They come from varying economic and social backgrounds.

Yet, despite their diversity, they all have ideas about where they're going in life. A recent survey of incoming freshmen and transfers showed that despite their diversity, most RIT students had one thing in common: they wanted a professional/technical career. This is what RIT is all about. Long before the word "career" became popular, RIT stood solidly behind the idea that education for work—for a job—was worthwhile and sound. And over the years RIT has built up a lot of experience in moving graduates directly into a career.

Veterans

The veteran, often a little older and usually ready to move directly toward a career goal, will find at RIT a serious purpose in education where he or she can make up lost time with minimum problems of adjustment. Veterans' programs at the Institute help vets deal with the machinery of the Veterans' Administration and with the opportunities the government gives them.

Study at RIT is approved under PL89-358 (Readjustment, 1966) PL815 or PL894 (Rehab) and PL634 (War Orphans). For benefits an application for the Certificate of Eligibility may be obtained from the Veterans' Affairs Office, located in the basement of the College-Alumni Union.

VA Form 21E-1995, "Request for Change of Program or School," is used when the veteran wishes to transfer schools. This should be filled out immediately upon acceptance at RIT.

Transfer students

More than 45 percent of all full-time students attending RIT transferred from another two- or four-year college. RIT doesn't simply disregard their previous experience; RIT thinks it's valuable. In order to continue building on its excellent relationship with two-year colleges, RIT has a Center for Community/Junior College Relations. This is an excellent two-way channel for cooperative action. For information on transferring to RIT, see page 14.

Deaf students

The more than 1,000 students registered through the National Technical Institute for the Deaf (NTID) make a distinct contribution to the educational processes of the Institute. They are RIT students in every sense: they come from varied backgrounds, are registered in a wide variety of academic fields and fully share in the extracurricular and social life. 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 also participate in programs for deaf students by interpreting, tutoring, and taking class notes for them. RIT is proud of its share in this national educational effort for deaf people. For more information on NTID, see page 128.

The Center Links Students To Career Experiences

RIT's particular philosophy is called career education—and The Center for Cooperative Education and Career Services supports the Institute's commitment to preparing students for "the making of a living and the living of a life." We made a commitment to career education as early as the 1880s. We began the Cooperative Education Program in 1912. Our friends called it a bright new idea; we called it common sense.

Since 1912 RIT has developed one of the country's largest and strongest co-op programs. Last year alone over 1,000 employing companies participated in the program, hiring students to gain career experience as a part of their RIT curriculum. Those 1,000 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. At RIT the center and the student are committed to the philosophy of career education that makes co-op an experience of a lifetime.

The Center for Cooperative Education and Career Services provides counselors for each student, available to assist from the beginning of the co-op program right through career entry upon graduation. We take pride in being ready to give students an edge over the competition when they graduate. The center assists through individual career counseling

and job search seminars to develop important skills, resource materials for career and job research, job listings from co-op and career employers, reference and credential service, and one of the best on-campus interview programs going. We are serious about our students' career options. That's why the staff of the center not only counsels but also spends considerable time developing opportunities with employers nationwide for students in co-op programs and for graduates. We even help our alumni with lifetime services at their request. All of the center's services are available to students at no fee.

A center for information about the employment of RIT students and about employment for RIT students, the office conducts surveys of alumni, analyzes national employment data, and 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 RITs ability to provide a quality education firmly rooted in the dedication to preparation for career success. The Center for Cooperative Education and Career Services is committed to linking RIT students to career experiences and to career entry upon graduation.

Institute Standards For Student Conduct

RITs 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 that 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 life styles 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.

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, life styles 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 achievement 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 explicity and are communicated to students through residence halls publications.

Summary of conduct policies

In keeping with the principles listed above, 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

'Rochester Institute of Technology, "1980 Master Plan" (March 1980)

'George W. Hoke. Blazing New Trails (Rochester N Y. Rochester Athenaeum and Mechanics Institute, 1937) p. V.

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 abuse
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, fend 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.

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.

Admissions Staff Strives to Serve Special Needs

RIT takes pride in the diversity of its student body—a diversity actively promoted by the Office of Admissions.

Women, veterans, returning students, minorities, commuters, handicapped and international students are people with individual needs that require support from RIT's student services, according to James G. Miller, associate vice president for Institutional Advancement.

"Each of the admissions staff members works with a group of students who may have special needs," he says. "In addition to the daily counseling and recruiting responsibilities, each counselor acts as an advisor and program coordinator for a different group on campus.

"Arthur C. Friedel keeps in contact with the international students on campus, who are here from as far away as Malaysia and India.

"The international student population at RIT is steadily increasing due to the unique education opportunities offered. Graduates return to their respective countries with the knowledge and expertise needed to solve economic, technical and environmental problems.

"A photographer from Mexico might come to RIT for refresher courses, or a whole group may come to campus for a full four- or five-year degree program. Whatever the case, they need someone on campus who can direct them to the services offered in English tutoring, counseling or health care. And our department offers that personalized assistance."

Barbara Bell's concern is the minority student. She actively recruits minority students and conducts special career days for prospective students.

Another admissions staff member takes particular interest in women on campus, and is sensitive to the fact that RIT has been viewed as a technical, and therefore male-oriented, institution. "Dorothy Lowe is involved in encouraging women to pursue careers in technical fields, and informing them about the many options open to them," Miller explains. "We also assist students in locating services they may need on campus—in child care, chaplaincy, counseling or career development assistance."

Whether you are a high school student or an experienced homemaker exploring a second career, we encourage you to seek our assistance while you clarify and re-examine your personal career goals. New and exciting career opportunities are available in areas that traditionally were thought of as being male dominated. Majors in accounting, engineering and photographic marketing management are just a few of the many programs available at RIT for women who are interested in pursuing challenging careers.

The admissions staff is prepared to draw upon the various Institute resources and support services to explore the world of work to placement services for those ready to begin the job search. Through this assistance referral, we can give you a better insight into the opportunities and challenges at RIT.

This involvement of the admissions staff allows them to keep in contact with students currently enrolled.

"If we're going to counsel incoming students intelligently, we all have to be involved with the day-to-day concerns of students who are already here. Our advisory functions keep us in touch," Miller remarks. "Plus the input of the students who work with us part-time in the office is great for providing regular communication and feedback."

The actual admissions procedure is another way in which the admissions staff maintains personal contact with students. A prospective student can expect the admissions staff person who initially interviews him or her to act as a liaison throughout the ad-

mission process. The counselor takes personal responsibility for following up on the status of each applicant.

Miller explains that Admissions is more interrelated with other departments. "We work closely with Financial Aid, the Counseling Center, the Learning Development Center, the Center for Cooperative Education and Career Services, Records and Institutional Research, the NTID Admissions Office, alumni, and with each of the colleges so that better communication can be maintained. That's just one of the ways in which we're trying to make life—and learning—easier for the students as they experience the educational process at RIT."

The Technical and Liberal Studies Option

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 freshman 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 RITs 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. For more information on this option, refer to the College of Liberal Arts section further in this bulletin.

Veterans Are Achievers

"Because our veterans are a little older and realize the value of an education, they undoubtedly try harder," says Gene Clark, director of Veterans Affairs. "They have proven that one's level of maturity and interest in self-development are key factors in successful completion of one's goals. Our average veteran at RIT usually has the added responsibility of a family. With it, of course, comes the added financial pressure of maintaining a home and, more often than not, a full-time job. Because of the complexities of governmental regulations and benefit payment," says Gene, "our veterans have become very dependent on our ability to service their needs. They come to the Office of Veterans Affairs for counseling, information, assistance with problems, tuition deferments, and just to say hello. We, for the most part, are all veterans and feel that having been there makes it easier for those who are to follow. Veterans helping veterans is the basis of our services."

The Office of Veterans Affairs... conveniently located on the lower level of the college union and easily accessible for day and evening students ...is open daily from 8 a.m. until 8 p.m., Monday through Thursday, and until 4:30 p.m. on Friday. The OVA staff is comprised of the director, program secretary, peer-counselors, and VA work-study students constantly handling inquiries and assisting veterans with VA related information. With their assistance, a veteran or dependent can be sure of a steady transition into and through the RIT educational experience.

"Successful contact with our veterans has proven that VA problems can be effectively dealt with before they have a negative impact on our vets," maintains Clark. "We are concerned that many veterans and the dependents of deceased and disabled veterans are not utilizing their benefits. Benefit payment rates have been recently increased and the length of eligibility extended to 10 years for program completion."

Gene is a U.S. Air Force veteran and presently serves as a commissioned infantry officer with the U.S. National Guard. His degree in business administration combined with his military experience and expertise in veterans' programs provide the background that enables him to successfully assist veterans and their dependents through the maze of veterans' benefits.

Costs

Payment Procedure/The Quarterly Pre-Billing
Charges at RIT are computed on a quarterly basis. The Institute must receive payment in full 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 1984-85 school year are as follows:

Fall Qtr.	August 15,1984
Winter Qtr.	November 1,1984
Spring Qtr.	February 7,1985
Summer Qtr.	May 7,1985

The student should receive the quarterly pre-billing approximately two weeks prior to the quarterly due date. 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 WITHOUT PRIOR NOTICE.

Tuition
The full-time (12-18 credit hours) undergraduate amount is $2,085 per quarter.

The part-time (less than 12 credit hours) tuition is $177 per quarter credit hour.

Any undergraduate carrying over 18 quarter credit hours will be charged $2,085 plus $177 for each credit hour over 18.

Please refer to the subsequent charts for more specific tuition information.

Other fees
In addition to the fees outlined in the following charts, certain segments of students may incur other fees as follows:

Residence Halls Association Fee—$5 per quarter charged to all residence hall students. (New students living in the Residence halls will be charged a new student room and board fee of $38.)

Off Campus Student Association Fee— $2 per quarter charged to all full-time undergraduates not living in the residence halls.

Orientation Fee—$40.00 one time charge for new students.

Photo Facilities Fee—$42 per quarter charged to all full-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 $108 is assessed Fall Quarter to all full time students who have no other medical insurance and have not signed the waiver option.

12 month payment plan
For the 1984-85 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) 475-6168, 6188.

Deferred payment plan
For those students who are not able to pay the amount due by the designated due date, RIT has made arrangements for deferred payment through a local bank. With this plan you may defer no more than 50 percent of your quarterly balance. For further information regarding this plan call the RIT Bursar's Office at (716) 475-6186.

Books and supplies
These vary widely with the program followed and to some extent the electives chosen. Those having minimal expenses (e.g. sciences, business) will average $250-300; 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 you. 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	$6,255
Fees	135
Room	1,695
Board	1,626
Books	307
Personal & Transportation	805
Total	$10,823

As indicated in the preceding paragraphs, expenses will vary according to individual circumstances. A detailed table of charges for tuition and fees according to program choice is found on the following pages.

Refund Policies

Advance deposits are non-refundable.

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 course 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. It remains the student's responsibility to contact his or her department to assure that the withdrawal form and refund are properly processed.
3. If part-time students drop a course during the Official Drop Period (first 10 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 reasons 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 the first week of classes - 90% tuition reduction
During the second week of classes - 75% 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 not constitute an official withdrawal.

A student in not "officially withdrawn" until he or she receives a copy of the withdrawal form. The date on which a withdrawal form is properly completed shall be the date of "official withdrawal" used to determine the refundable amount.

If the student drops his or her course load from full-time (12 or more credits) to part-time (less than 12 credits) status during the Official Drop Period, he or she may contact the bursar for a refund based on the differential between the full-time tuition payments and the total per-credit-charge for the part-time load.

No refund will be made for classes dropped after the Official Drop Period unless the student is officially withdrawing from the Institute.

Fees are not refundable.

Appeals process
An official appeal process exists for those who feel that individual circumstances warrant exceptions from published policy. The initial inquiry in this process should be made to Richard B. Schonblom, bursar. Unresolved matters will be referred for further action to Wiliam J. Welch, controller.

Room and Board*
To complete a withdrawal from RIT, a resident student or a non-resident student on a meal plan must check

An Aid To Estimating Tuition, Fees

College	School, Department or Program	Co-op	Year	Tuition Per Year	Fees[2]	Total Per Year	Quarterly Payments[1]		
							1st Qtr.	2nd Qtr.	3rd Qtr.
College of Applied Science and Technology[5]	Computer Science and Technology	Yes	1 & 2 3, 4, 5	6255 4170	120 80	6375 4250	2125 2125	2125 2125	2125
	Engineering Technology	Yes	1 & 2	(Completion of 2 years at another college)					
			3, 4,5	4170	80	4250	2125	2125	
	Packaging Science	No	Each Year[3]	6255	120	6375	2125	2125	2125
	Audiovisual Communications, Instructional Technology	No	1 & 2	(Completion of 2 years at another college)					
			3, 4	6255	120	6375	2125	2125	2125
	Food, Hotel & Tourism	Yes	1-4[4]	6255	120	6375	2125	2125	2125
Business[4,9]	Bus. Administration Management Retailing	Yes	1 2 3 4	6255 6255 4170 6255	120 120 80 120	6375 6375 4250 6375	2125 2125 2125 2125	2125 2125 2125 2125	2125 2125 2125
	Photo Marketing	No	Each Year	6255	120	6375	2125	2125	2125
Engineering	Electrical Mechanical Industrial, Computer or Microelectronic	Yes	1 & 2 3, 4, 5	6255 4170	120 80	6375 4250	2125 2125	2125 2125	2125
Fine and Applied Arts	Art and Design School for American Craftsmen	No No	Each Year	6255	120	6375	2125	2125	2125
Graphic Arts and Photography	Photographic Arts and Sciences Printing	No 3	Each Year	6255	246	6501	2167	2167	2167
Liberal Arts	Criminal Justice Social Work	Yes	Each Year	6255	120	6375	2125	2125	2125
	Economics ,	No	Each Year	6255	120	6375	2125	2125	2125
Science	Biology Mathematics or Physics	Yes	1 & 2 3, 4,5	6255 4170	120 80	6375 4250	2125 2125	2125 2125	2125 2125
	Chemistry	Yes	1 2-5	6255 4170	120 80	6375 4250	2125 2125	2125 2125	2125
	Clinical Science	No	1,2.3	6255	120	6375	2125	2125	2125
			4	(Full-time internship in approved hospital)					
Counseling Center	Career Decision	No	Only 1	6255	120	6375	2125	2125	2125

Note: Books and supplies are not shown in the tables above, since they vary so much with each program. It is, however, essential that they be remembered in budgeting for upperclass years. This is especially true for students in arts and photography.

[1] In cooperative programs, students pay tuition for quarters enrolled for classes at RIT; normally two per year in alternate quarters.

[2] Does not include Residence Halls Associations Fee, Off Campus Student Association Fee, Orientation Fee or Medical Insurance Fee (optional).

[3] If printing or packaging science students elect to follow the voluntary cooperative plan, tuition is charged only for quarters enrolled for classes at RIT.

[4] Students in these programs attend classes for 11 quarters over the 4-year program. Payments are due for quarters assigned to school, which may differ in time but not in quantity from above chart.

[5] Students enrolled in undergraduate evening programs in these colleges should not refer to above chart for tuition and fee rates. Rates for these programs are:
Undergraduate, $110.00/Cr. Hr.; Graduate, $147.00/Cr. Hr.

Any undergraduate carrying over 18 quarter credit hours will be charged regular tuition plus $177 for each quarter credit hour over 18.

Tuition for part-time undergraduate students (carrying fewer than 12 quarter credit hours) is at the rate of $177 per quarter credit hour.

Student Activity Fee is assessed at $5 per quarter.

Note: RIT matriculated day college students taking CCE courses will be charged the day college tuition rates.

out with Housing and/or Food Service. Refunds, when granted, are from the date of official check-out.

Partial refund schedule:

1. Room
   a. During the first week of classes 90% of unused room charge
   b. During the second week of classes 75% of unused room charge
   c. During the third week of classes 60% of unused room charge
   d. During the forth week of classes 50% of unused room charge
   e. Fifth and subsequent weeks -No refund
2. Board
   a. During the first four weeks, 75% of unused board charge
   b. After the first for weeks, 50% of the unused board charge

** A specific rate schedule is available in the Housing Olfice.*

Financial Aid

There are a variety of scholarships, loans, grants, fellowships, and other aid programs available to help you pay for your education, and the best way to find out about them is to check with the RIT Student Financial Aid Office as soon as possible.

The main objective of the Student Financial Aid Office is to help students (including freshman, transfer, upperclass, and graduate) and their parents plan for and meet the costs of attending RIT.

It is RITs philosophy that eligible students will be considered for financial assistance according to financial need. Normally this is arranged as a package of aid, consisting of scholarship, grant, loan, and/or employment in conjunction with outside scholarships and grants such as the New York State Tuition Assistance Program and Regents Scholarship, Pell Grant (formerly Basic Education Opportunity Grant), or other state and federal awards. Also, there is a full range of benefits available to eligible veterans attending RIT.

RITs cooperation programs offer participating students an opportunity to make a very significant contribution to their total college expenses in addition to the valuable experience gained on the job.

Additionally, through the Student Employment Office, there are many part-time positions available to help defray expenses. Those needing the income from full-time employment should consider attending RITs College of Continuing Education evenings.

Inquires for all types of financial assistance should be directed to the RIT Office of Student Financial Aid, One Lomb Memorial Drive, P.O. Box 9887, Rochester, N.Y. 14623; phone (716) 475-2186.

Scholarships

The RIT Board of Trustees has provided a scholarship fund from which general awards are made to entering freshman and transfer students. Other scholarships have been provided by the gifts of the alumni, friends, corporations, foundations, and the income from permanent funds.

Scholarships from these sources may vary in amounts from $100 to $5,559. The amount of the scholarships and the recipients are determined on the basis of entrance examination data, high school and/or previous college record, and the need for financial aid. These are one-year scholarships. Students receiving scholarship aid may apply for renewal of their award each subsequent year. In all cases the stipend is based on financial need.

A number of industry or business sponsored scholarships are available to entering students in specific departments. In some cases the scholarships are restricted to students from a particular geographic area. In general, scholarships of this type are for three to five years of study, and the student must maintain a specified academic average. Scholarships in this category vary in size from $300 to $6255.

The Financial Aid Form (FAF) of the College Scholarship Service (CSS) is required each year for scholarship consideration. Financial Aid Forms received at CSS on or before March 1 each year receive first priority consideration. Applications received after that date will be considered if funds remain available.

International student scholarship fund

The purpose of this scholarship is to assist international students attending RIT who qualify in meeting their educational obligations. A limited number of small scholarships are awarded annually winter quarter. Applicants must posess an F-1 visa, be full-time matriculated students and should not already be on a fully funded scholarship. To be eligible, applicants must also be in residence at RIT for three quarters if an undergraduate or one quarter if a graduate student and should not be a previous recipient of this scholarship. Awards are determined by the International Student Scholarship Committee. Criteria for selection include academic performance with a G.P.A. of 2.8 and demonstrated financial need. For further information, visit the Office of international Student Affairs located on the second floor of the Administration building.

Tuition payment plans

Monthly payment programs are available through a number of commerical banks and agencies. Inquires regarding these programs should be directed to the RIT Student Financial Aid Office.

Twelve-Month Payment Plan

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. Domitory residents will contact 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 this program may be obtained from the Student Financial Aid Office.

Non-residents

There are no additional charges or fees for RIT students coming from states other than New York State.

To apply for aid

To be considered for financial aid, a student should be enrolled as a full-time or part-time student or have been offered admission as a full-time student.

Although applications for financial aid aren't processed until a student has been accepted, a student shouldn't wait until receiving notification of acceptance to file for financial aid. This should be done when applying to the Institute. Students are urged to file the Financial Aid Form with the College Scholarship Service

between January 1 and March 1 each year. Applications received in Princeton after March 1 will receive secondary consideration depending upon the availability of funds.

The Financial Aid Form is the basic form used in determining eligibility for most financial aid programs.

Completion of this form entitles an applicant to be considered for all types of financial aid offered through RIT. (In a few cases special applications are required and eligible applicants will be notified.)

The confidential statement forms published by the College Scholarship Service may be obtained at local high school guidance offices, local college's financial aid offices, RITs Financial Aid Office, or by writing directly to College Scholarship Service, Box 176, Princeton, New Jersey 08540.

Freshman and transfer students can expect notification of financial aid awards by April 15, and upperclass students can expect award notification during May and June.

RIT awards financial assistance primarily on the basis of need. Financial need is defined as the difference between the cost of education and the amount of money that the student has available from outside resources. Outside resources include the expected parental contribution based on their income and assets, student's assets and expected summer savings, outside grants, scholarships, and funds borrowed through the guaranteed student loan program.

Selection and eligibility—campus based aid programs

Campus based aid programs include National Direct Student Loan, Supplemental Education and Opportunity Grant, College Work Study, RIT Grants, and RIT Scholarships,

To be awarded financial aid, an individual must be admitted as a degree candidate. The student must be a matriculated student at the time he/she receives aid. RIT makes every effort to continue financial assistance to students each year provided they remain in good academic standing, file the required applications by the recommended deadlines, and financial need continues to be demonstrated.

Continued receipt of financial assistance is contingent upon continued demonstration of academic progress. A student may become ineligible to receive further assistance for any of the following reasons:

- Failure to demonstrate academic progress according to the standards set by the dean of the student's college.
- Loss of matriculated (degree seeking) status.
- Failure to meet minimum standards of progress established by New York State Education Department for the awarding of state tuition grants and scholarships. These standards for associate's degree and bachelor's degree programs are listed on the next page.

Awards are based primarily on financial need and the availability of funds. Academic achievements and community involvement may also be considered. Renewal awards to upperclassmen may be offered in different combinations of grant, loan and work.

Students who are not registered for a minimum of 12 credit hours will not receive campus based awards for that quarter.

State Aid—New York Tuition Assistance Program (For N.Y. Residents Only) (TAP)

The Tuition Assistance Program attempts to minimize the difference in cost normally found between New York public and independent colleges so that students are able to make their choice based on program characteristics alone and not the difference in cost. There is no competition for TAP support.

Selection and ellgibiligy for New York State Tuition Assistance Program

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 income requirements, must pursue the program of study in which he/she is enrolled and must make satisfactory progress towards completion of his/her program of study. Listed below are 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 1-3
Complete 9 credits per quarter to receive TAP payments 4-6
Complete 12 credits per quarter to receive TAP payments 7-12

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

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I. 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 shall 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 may also 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.

II. Reasons for which a waiver may be granted (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. Financial: 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 academic majors *or* students whose failure to meet progress standards was directly caused by changing academic majors* may be considered for a waiver. The student's entire academic record will be considered. A performance contract may be required.

E. Divorce/separation within the student's immediate family creating a demonstrable financial/emotional disruption sufficient to affect progress.

F. Performance contract: The following categories of students are eligible to apply for TAP waivers based on successful completion of a performance contract. (The performance contract will require *minimum* completion of 12 credits with a minimum quarterly GPA of 2,00. Additional requirements to demonstrate potential for success may be stipulated).

1. *First quarter transfer students* who fail to meet TAP academic standards in the first quarter of attendance may request performance contracts.
2. *Third, fourth, fifth year undergraduate students with a cumulative GPA of 2.00 or better* may request performance contracts for waiver of program pursuit requirements. Students will also be required to submit documentation regarding reason for dropping below full-time course load during the quarter pursuit requirements were not attained.

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.

'Normally this will be the student who has attained a satisfactory grade point average but has lost degree credit hours due to changing majors.

Standard of Satisfactory Progress for the Purpose of Determining Eligibility for State Student Aid

Baccalalureate 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 Cumulative 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 Cumulative 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	Amount*	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 Service 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.	$300 to $2,700 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 (Formerly Basic Educational Opportunity Grants)(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 $1,900 per year.	File Financial Aid Form requesting submission to Pell Grant or file separate Pell Grant application.
Supplemental Educational Opportunity Grants (Federal)	Students of academic promise who are accepted for college study and are in exceptional financial need, and arc pursuing their first bachelor's degree.	$200 to $2,000 per year for full-time students.	Through RIT by use of the Financial Aid Form, File F.A.F. 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	Eligibility varies.	Amounts vary.	File Financial Aid From between Jan. 1 and Mar. 1 of each year.*
Higher Education Opportunities 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.
Student Loans			
Guaranteed Student Loan (GSL)	Must be at least a half-time student.	Undergraduates - up to $2,500 per year. $12,500 cummulative maximum.	Local Lenders.
Auxiliary Loan to Assist Students (ALAS)	Must be at least half-time and qualify as an independent student.	$2,500 per year minus any amount borrowed under Guaranteed Student Loan in the same year.	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.	$3,000 per year for each dependent who is a full-time student.	Local Lenders.
National Direct Student Loans	College students who meet financial need requirements established by Federal Government.	Up to $3,000 for first two years of undergraduate study. Maximum of $6,000 for four and five years of undergraduate study; $5,000 for graduate study.	Through RIT by use of the Financial Aid Form. File between Jan. 1 and Mar. 1 each year.*
RIT Supplemental Loan Program	Full-time, undergraduate, matriculated RIT students. Eligibility to borrow may be affected by receipt of funds from other aid programs.	Minimum of $1000 per year up to a maximum of $5,000 per year.	RIT Financial Air Officer.
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 between Jan. 1 and Mar. 1 each year.*
Other college part-time work	Considerable variation in kinds of positions, hours, and wages.		Consult other RIT publications and RIT Student Employment Office.

•NOTE: For first priority consideration, the F.A.F. 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.

Admission Procedures and Services

Specific entrance data for each college I* listed In a chart near the beginning of each collage section In this bulletin. For each program, we have indicated the required high school subjects, desirable elective subjects and other factors considered by the Admissions Committee.

General information
Your high school or previous college record is usually the best predictor of success. Some other factors that could indicate a potential for success are: (1) better than average grades in the required high school subjects, (2) an improving record of achievement as you progressed through high school/college, (3) above average admission test scores, (4) graduation from a highly competitive high school whose graduates are usually successful in college, and (5) post high school experience in service or employment that gives evidence of potential for success.

When applying for admission to RIT, one applies for a degree program in one of the individual colleges. However, there is opportunity for electing courses in other colleges as they meet personal goal objectives, and some programs are purposely designed for interdisciplinary experience. In general, serious thought about a career is assumed. Education is thus more direct, and graduates are eagerly sought for their professional competence.

To apply as a freshman student
To apply as a freshman student, you submit your completed undergraduate application and nonrefundable $25 fee, official high school transcript and entrance examination scores. Applicants are required to have results of the Scholastic Aptitude Test (SAT) or the American College Test (ACT) submitted to the Admissions Office. Locations of test centers throughout the world, test dates, and application fee information can be obtained from your school or by writing to: College Entrance Examination Board, P.O. Box 592, Princeton, NJ 08540, or P.O. Box 1025, Berkeley, Calif. 94701; The American College Testing Program, P.O. Box 414, Iowa City, Iowa 52243.

To apply as a transfer student
RIT welcomes transfer students. Currently, more than 45 percent of our students began their education at another college.

To apply as a transfer student, you submit your completed undergraduate application and nonrefundable $25 fee to the Admissions Office. In addition, the following rules apply to transfers:

1. You do need to submit official transcripts of all college study completed.
2. Provide us with a list of the courses you are now taking not listed on your transcript, and any others you expect to complete prior to enrollment at RIT.
3. If you've already earned 16 or more college credits, submission of SAT or ACT test scores is optional.
4. If you've completed two or more years of college prior to enrollment at RIT, you do not need to submit your high school transcript.

All transfer applicants are responsible for insuring that required official transcripts and other documents have been received by the RIT Admissions Office.

Transfer credit
If you've completed studies at another college before coming to RIT, we'll place you at the highest level at which your success in a program can reasonably be expected.

We'll give you junior standing in most programs if you've earned an associate's degree (AS or AAS) or equivalent in programs comparable to the RIT program you select. Admission standards vary by program.

Study in the summer term to facilitate your transfer may be required, particularly if you'll be majoring in fine arts or photography. See applicable program descriptions in this bulletin.

If you've had only a small amount of college study or will be making a significant program change when you come to RIT, we'll determine your transfer credit by an evaluation of individual courses in which you earned a "C" grade or better. Admission will be based on our prediction of probable success in the RIT program of your choice.

RIT students who wish to take courses at other accredited institutions and receive transfer credit towards their RIT degree need to secure the prior written approval of the dean(s) of the RIT college(s) concerned in order to assure the appropriateness of the course content and course level for those courses.

Credit by examination
RIT grants credit for satisfactory scores on examinations covering objectives and contents parallel to the RIT courses for which you seek credit. Usually these are CEEB Advanced Placement or College Level Examinations, New York State Proficiency Examinations, or RIT-prepared examinations. Contact the director of Admissions for procedures.

Visit to campus
We encourage campus visits and personal interviews in order that you may see firsthand the modern 1,300 acre campus and be provided answers to questions you may have. A personal visit will further overall understanding of the Institute, what it has to offer academically and the many services that are available.

To arrange for a tour or counselor interview, simply call the Admissions Office (716) 475-6631, Monday through Friday between 9 a.m. and 4:30 p.m.

Action on applications
RIT accepts students on a "rolling admissions" basis. This means that applications are reviewed and decisions regarding acceptance are made within a few weeks after the application and supporting documents are received in the Office of Admissions. RIT begins accepting applications in September for the following September.

Because of this policy, and because many of RITs programs fill to capacity very early in the year, it is to a student's advantage to apply as early as possible for admission.

When all required information is received, you will be notified of one of the following actions:

1. Acceptance to your program of study. A transfer student will receive an evaluation showing credit granted and our estimate of time needed to complete your selected program.

2. Acceptance to program of study, but placed on a waiting list because available places in that curriculum have been filled. When vacancies occur, those judged to be the strongest candidates are selected from the waiting list. The probability of vacancies for those on the waiting list is not predictable. Those remaining on waiting lists will be considered for future entrance dates only if they specifically so request.

3. Deferral of action until more recent grades, test scores or other data requested are available.

RIT admits students without regard to race, color, sex, marital status, disability, or national or ethnic origin.

Early admissions

Occasionally a student will complete the prescribed number and adequate distribution of high school units in three years of high school with the exceptions of fourth year English and/or history. In such instances, he/she may seek admission to RIT under the Early Admissions Program; i.e., without certification of high school graduation. If admitted, the student must fulfill the senior year high school course and first year college course concurrently, and upon successful completion of the course, is then certified for high school graduation by the high school.

Physical examination

A physical examination is required. Submit your exam report on the form provided with your offer of admission before your first RIT registration.

Admission deposit

A $200 nonrefundable advanced acceptance of admission deposit reserves a place in your class and is credited to your first quarter's 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 after acceptance, whichever is later.

International students

Students from countries outside the United States are extended a cordial welcome to study at RIT. Arthur Friedel, assistant director of Admissions, handles international student admissions. He assists students from other lands with some of the questions they face in the admissions process. His telephone number is (716) 475-6631.

The international community is well represented at RIT, with approximately 70 faculty and nearly 250 students from more than 50 countries.

Requirements of admission include the satisfactory completion of secondary schools, which may vary from country to country, but generally represent ,2 years of study.

Students who have attended other colleges or universities must arrange to have the college or university send complete, official transcripts, with English translations, directly to the Admissions Office for evaluation. Credit for advanced standing may be awarded only for courses comparable to those offered at RIT and with a grade of at least "C" or the equivalent.

International students should be prepared to meet all expenses in full, as employment opportunities are limited and student aid is rarely available.

Applicants whose native language is not English are required to take the Test of English as a Foreign Language (TOEFL) administered by the Educational Testing Service, Box 899, Princeton, New Jersey, 08540, USA. This test will be given throughout the world in these months: September, November, February, April, and May. The minimum score for admission is 525.

When applicants are judged acceptable, RIT will prepare and forward an official letter of admission and copy of Certificate of Eligibility, Form I-20. The I-20 should be taken to the nearest American Consul for the purpose of securing a Non-Immigrant "F" Student Visa. Applicants must also show evidence of their ability to pay all their expenses, through their own means, for the entire period of their stay in the United States by submitting the Declaration and Certification of Finances. Usually some time is required to complete this operation.

The Office of International Student Affairs serves as the focal point on campus for all international students regardless of their programs of study. The office provides assistance with student immigration matters, serves as a resource center for campus and community activities, and helps students solve problems encountered while away from home. The office staff also plans a four-day orientation program for new international students each fall quarter and facilitates contact with the Rochester International Friendship Council to provide friendship and hospitality to international students. After acceptance, the international student may wish to correspond with:

Mrs. Barbara Letvin
Director, International Student Affairs
Rochester Institute of Technology
One Lomb Memorial Drive
Box 9887
Rochester, New York 14623

The RIT International Student Association is committed to providing support and assistance to international students as well as working with the Office of International Student Affairs to develop intercultural programs and activities. International applicants who wish to correspond with a student from their country should write to: President of RIT International Student Association, in care of Barbara Letvin, at the address previously stated.

ESOL Department

The ESOL (English to Speakers of Other Languages) Department in the Learning Development Center offers individual instruction and classes in pronunciation, grammar, writing, conversation, reading and vocabulary. These support services are offered for a fee. A full-time intensive English language program is also available. The full-time program qualifies students for the Certificate of Eligibility form I-20.

Prior to beginning academic courses, all new RIT international students are required to take a battery of tests to evaluate their English language and communication skills. If the results of these tests indicate that a student is deficient in English, the student will be required to study English in the ESOL program and bear the cost of this additional instruction. The cost of this instruction will depend on the particular language needs of the student.

For more information about the English program write to:

Rhona Genzel, Director ESOL Program
Rochester Institute of Technology
One Lomb Memorial Drive
P.O. Box 9887
Rochester, NY 14623

Deaf students

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 greater detail on pages 120-123 of this bulletin. Deaf students can request additional information about NTID at RIT by writing to:

Rochester Institute of Technology
Associate Director of Admissions (NTID)
One Lomb Memorial Drive
P.O. Box 9887
Rochester, New York 14623

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
RIT provides three opportunities to register for classes. These are: pre-registration, open registration, and late registration. The earlier the registration in which students participate, the better the opportunity of obtaining their choices. To be officially enrolled in the Institute, students must be academically eligible, scheduled into courses, and must have made the required financial commitment.

Students are expected to complete registration (including the payment of all fees) by the dates prescribed in the Institute Calendar. Students who elect to register after Open Registration will be assessed a $25 late fee. After registration, any student who has added a course, but who has not made his or her financial commitment with the Bursar's Office, will be dropped from all courses, during the second week of the quarter.

Non-matriculated registration
Students who are not formally accepted into a program register as non-matriculated students. This registration occurs the day following Open Registration. Students who participate in this registration are not subject to the late registration fee.

Changes of registration
Any change in enrollment must be recorded with the Office of the Registrar. Students may add classes to their academic schedule during the first five days of a quarter and drop classes during the first two weeks (excluding Saturday, Sunday, and holidays).

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 internal 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, mailing address and telephone number, 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.

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. The charge for each copy of a transcript is $2. 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."

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. For Spring and Summer Quarters, all grade reports will be mailed directly to the permanent address.

Change of name or address
It is the obligation of every student to notify the Office of the Registrar of any changes in name or address. Failure to do so can cause serious delay in handling student records.

Student retention
Based on a summary of the most recent cohort survival 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

Rochester Institute of Technology stresses programs that lead to a high level of technical and professional competence. Programs of study are offered which lead to degrees at the associate, baccalaureate, and master's levels. Certificate, diploma and associate degree programs are offered by the College of Continuing Education and the National Technical Institute for the Deaf. For information on these programs please refer to the individual college's catalog or bulletin.

Graduate degree programs
The 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 (non-credit)
W Withdrawn
X Credit by Examination
Z Audit

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 10 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.

Quality points
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 credit 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 (G.P.A.) R, W, Z, S, X and I grades are not used on computing G.P.A.

The grade point average is computed by the following formula:

$$\text{G.P.A.} = \frac{\text{Total quality points earned}}{\text{Total quality hours}}$$

Deans' List
By action of the college concerned, matriculated undergraduate students will be placed on the Deans' 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 quarter 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 may qualify for the spring quarter Deans' 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 quarter 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 degree 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* 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 2.00* 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 2.00 will be *placed on probation.*

2. Any student who has been placed on probation according to (1) above is *removed from probation* for achievement of both a 2.00 Program Quarterly Grade Point Average and a 2.00 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) above 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 2.00 will be suspended. Any student who has been placed on probation after having been removed from probation and whose Program Cumulative Grade Point Average is 2.00 or above will be granted one quarter to be removed from probation or he/she will be suspended from RIT.

5. Any student whose Program Quarterly Grade Point Average falls below 1.00 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 nonmatriculated basis if it is approved by the dean of the college in which the enrollment is required.

In evaluating the request for waiver of 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.

Class attendance and other rules
Students are expected to fulfill the attendance requirements of their individual classes. Rules and regulations relating to conduct in the 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 npt 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 Saturday classes 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 shall 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 final 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 2.00.
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's degree and 180 quarter credit hours for the baccalaureate degree.
6. Physical education requirements as published in this *Official Bulletin.*
7. Demonstrate competence in writing skills as established in the Institute's writing policies.

Writing policy
The writing policy of Rochester Institute of Technology 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 is 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.

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.

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 6-8 weeks following the end of the quarter in which he/she was certified.

***"C"** *Average*
" The principal lieid ol study is generally defined to be all courses within the 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 ol study. The packaging science programs, the *printing and engineering systems program, and programs offered through the College of Continuing Education and NTID do not have principal field of study statistics calculated.*

Student Affairs Offers Services For Help in and out of Classroom

What happens in the classroom is one part of a college education. But what happens outside the classroom can be almost 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, Minority Affairs, 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 staffs, have their own governing organizations and develop social programs. A wide variety of athletic, social and professional activities is available for all students.

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 professional development of students by aiding the colleges in establishing programs within the context of their own curricula. 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 with non-profit agencies in the Rochester area and which focuses on the importance of civic awareness; the Educational Travel Program which is unique in its approach to exploring new places behind the scenes and in expanding the campus outside the walls of RIT; the Outdoor Education Program, which is an intriguing way to learn decision-making and group interaction skills using the outdoors as the classroom, and the Student Speakers' Bureau, a new program that recruits, trains, and places student speakers in the community to share their interests and represent RIT. 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. Jointly sponsored by NTID, these programs also serve to increase the interaction of hearing and deaf students.

Certification also is given to non-funded projects already underway that involve students in extended activities that do not entail academic credit. Such documentation is valuable to students in developing their employment placement credentials. 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.

Extra Help for Those Who Need It: HEOP

"Basically, what we're doing is making it possible for disadvantaged students to come to college. Without HEOP, these students wouldn't have been offered acceptance to RIT," says Barbara Chambers-Ekpo, the director of RIT's Higher Education Opportunity Program.

"The students in the program not only have financial difficulty, but they also have not excelled in school," she explains. "However, it's had nothing to do with academic potential. They've had problems historically with lack of encouragement from guidance counselors, poor schools, younger sisters and brothers to take care of, time-consuming jobs—any number of things. It's not that these students aren't college material, it's just that they're underprepared.

"HEOP's responsibility is to help them to reach and maintain academic competence.

"Many of the students who are in RIT's HEOP are deficient in essential math and verbal skills. But they're competing with students who have been nurtured in supportive environments and have graduated from competitive schools. Professors are rarely aware that a student is in HEOP.

"We make acceptance and financial aid decisions, provide remedial instruction and tutoring, and do personal, academic and career counseling. At the same time, our students have complete access to all of RIT's student services."

The HEOP staff maintains an open-door policy.

All students admitted to the program as freshmen must enter a five-week pre-freshman program conducted the first summer. They take math and remedial reading as necessary. But everyone has to take Introduction to Psychology, which prepares them for the real thing. The instructor tries to incorporate different facets of a college course, such as a research paper, a personal opinion paper, and different types of tests. Students learn to use the library, organize a paper, and read a textbook effectively.

In the 12 years of its existence, HEOP has graduated more than 150 students, many of whom have landed excellent jobs. Graduates in technical fields have the highest success rate.

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. Up to a year's supplemental grant is available to any student who may need extra time to complete his or her program of study.

International Student Affairs

The Office of International Student Affairs is a resource center for students on visas or those who seek cross-cultural learning. The office provides assistance with immigration regulations and travel documents, helps international students adjust to academic and cultural expectations in the U.S., and provides cross-cultural learning opportunities for the RIT community. The staff works closely with RITISA, the international student organization, and serves as a liaison with off-campus groups who seek to extend friendship to international students. The office is located in the Administration Building, second floor, in the Learning Development Center. Phone 475-6943 for more information.

International student emergency loan fund.
The purpose of this loan fund is to provide emergency financial assistance to international students on visas. Loans cannot exceed $200 and must be repaid in two months. Students applying must have a good track record of payment with the bursar and must not have any outstanding debt to the emergency loan fund. For further information, visit the Office of International Student Affairs.

Counseling Center

The Counseling Center, located in Grace Watson Hall, offers a variety of services to RIT students. These services include:

- Personal Counseling
- Career Counseling
- Career Decision Program
- Career Resource Center
- SIGI
- Testing
- Research
- Developmental Programs
- Consultation

Counseling Center hours are 8:30-4:30, Monday through Friday and 8:30-8:30 on Wednesdays. For more information about Counseling Center services, please call 475-2261.

Personal counseling
Problems are a part of living. Yet problems often influence how we feel about ourselves and others, impose limitations upon our effectiveness, and interfere with our ability to achieve desired goals. While you are at RIT, you may experience personal problems such as feeling anxious, depressed, having difficulty with friends, courses or professors or being concerned about your relationship with your parents. Seeking individual help can be useful in coping with both large and small problems, and may be the first step toward handling them in a positive and effective way. Individual and group counseling is available for students 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, and coping with a personal crisis. Counselors can be seen initially without an appointment. Just stop by the Counseling Center between 9-12 or 1-4, Monday through Friday. There is no cost and you can be assured of confidentiality.

Individual career counseling
Career counseling is also available at the Counseling Center. Counselors can assist you in making thorough appraisals of your interests, abilities, and personality traits so that you can use this information in developing educational and vocational plans. Tests of aptitude, interest and personality may be used in this assessment process.

Group career exploration
For the student who would like assistance with choosing or reexamining a chosen field of study, the Counseling Center also offers a 3-credit Career Exploration course which provides students with 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:

1. Intensive career/academic advisement during a period of exploration and choice;
2. Opportunity to sample preferred coursework across as many as 3 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 3-credit Career Exploration Course referred to under "Group Career Exploration."

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 RIT Counseling Center, 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 catalogues on microfiche. Students are welcome to browse through these materials during the Counseling Center's regular hours.

SIGI
SIGI (pronounced SIGGY) stands for System of Interactive Guidance and Information. It is a computer-based guidance system designed to help you 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.

Research
The Counseling Center conducts research activities related to the quality of student life. One major research project is the New Student Survey which assesses the expectations of incoming students on such factors as academic goals, study habits, self-esteem, and level of career planning.

Developmental programs groups
The Counseling Center staff offers groups each quarter to assist students in maximizing their development. Such 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.

Consultation
Staff members of the Counseling Center will provide consultation services to interested student groups and organizations in a number of areas within the scope and expertise of the Counseling Center staff. Some examples of consultation services requested by student groups are as follows: 1) designing training programs, 2) problem-solving, and 3) conflict management.

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 realize fully their potential and to complete successfully their college career.

Special Services provides individual and group tutoring, study skills development and academic advisement. Also offered are individual and group counseling, specialized assistance for disabled students (i.e., readers, coordination or notetakers), advocacy and liaison with other campus and community resources.

Some of the activities featured are:
Achievement Awards Program- annual dinner to give recognition to and award student for academic or social achievement and to honor graduating members of the program.
Physical Challenges Days: Abled/ Disabled Events — a series of activities and presentations designed to create a better awareness of disabled students at RIT and their needs.
Politics and Poverty Seminar — a program sponsored jointly with the Higher Education Opportunity Program gives interested students the opportunity to learn more about our political system and how to take a more active part in it. The seminar culminates in a three day trip to Washington, D.C.

The Office of Special Services is also designed, in part, to provide support services to physically and/or learning disabled students at RIT. Support services include tutoring and additional academic support, counseling, career development, special programs, advocacy and referral resources in the community. The staff strives to help students resolve educational and non-educational problems that are related to academic success such as gaining accessibility to elevators and securing specially designed instructional materials or programs. Campus maps, the **Disabled Students' Guide to RIT** and information regarding any issue relating to accessibility—physical or academic—will be provided.

Contact the office at 475-2832 or -2833. It is located in Grace Watson Hall (wheelchair or orthopedically limited students may use the Campus Safety entrance).

The Office of Special Services is federally funded under the Office of Education. Eligibility for the program is determined by financial need, physical disability, or first-generation college status. Any student who is a citizen of the United States and meets one of the eligibility requirements may become a member of Special Services.

Foremost, the staff provides personal concern for and attention to each student enrolled.

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 appointment. 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 4:00 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.

For emergency transportation, the RIT ambulance is available. The unit can be reached through Campus Safety, at 475-3333.

Students who need immunizations for passports may be immunized at Student Health Service. First, find out from the Health Department of the place where you obtain your passport exactly against what you will need to be immunized. Take the list to the Student Health Service to obtain prescriptions for the necessary drugs. Once you have the drugs, Student Health Service will administer the shots.

A Student Health fee per quarter is mandatory for all full-time undergraduate students. All other students pay either the quarterly fee or on a fee-for-service basis. 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 through Health Service. The health fee does not include prescription medications.

The Institute **requires** you to maintain health insurance coverage as long as you are a student at RIT. You may obtain coverage either through RIT or your personal coverage.

If you have any questions about Student Health Service or health insurance, please contact the office, 475-2255.

Health records
Your medical record is confidential, and information will not be released without your written consent. Exceptions to this rule are made only when reports are required by the public health laws of New York State.

RIT ambulance
The RIT ambulance is a New York State certified volunteer ambulance service that operates in and around the RIT campus. The organization is an auxiliary of the Student Health Service. Its primary territory includes the main campus, Riverknoll, Perkins Green, Colony Manor and Racquet Club apartment complexes and the Hilton Inn.

Any student, faculty or staff member of RIT who is at least 18 years of age is eligible to join the ambulance crew. 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, leave a message with the Student Health Sen/ice at 475-2255.

Student Housing

The residence halls

The Department of Residence Life provides a living environment for approximately 6,000 students in residence halls or apartments. The Department of Residence Life, part of the Division of Student Affairs, 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. 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 with the housing information mailing.

Students cannot be guaranteed accommodations in the residence halls for more than one year due to current demand for housing.

Whenever housing projections indicate the need to do so, a number of upperclass students are required to vacate the residence halls to provide adequate space for new students. Most students leaving the residence halls can be accommodated in apartments near the campus.

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, business, computer science, engineering, and photography; International House for both international and American students; and Unity House, which emphasizes the development of black culture.

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 some entering students may be assigned to triple rooms.

All corridors and rooms are carpeted. A bed, desk, chair, dresser, closet, and window covering are provided for each student in a room. Each corridor in the unit has its own bathroom, equipped with showers. Some suites are available, composed of three bedrooms connected to a common bathroom. Each house has its own lounge furnished for study and relaxation. Coin-operated laundry facilities are available in the basement.

Each student is furnished with information on residence hall living by the Department of Residence Life after he or she is accepted.

All residence hall students must participate in one of the Institute board plans. The charges for residency and meals are included in the section on student expenses.

Apartment housing

Apartment housing is available to all married and upperclass single 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 RITs shuttle bus system. A brochure describing the four complexes-Colony Manor, Perkins Green, Riverknoll, and Racquet Club—is available from the Office of Off Campus and Apartment Life, One Lomb Memorial Drive, P.O. Box 9887, Rochester, N.Y., 14623; (716) 475-6920.

Off-campus housing

The Office of Off-Campus and Apartment Life provides an Off-Campus Center that strives to meet the needs of off-campus students by providing a variety of services and programs. The center maintains up-to-date listings of available rooms, apartments, and houses in the Rochester area and operates a Roommate Locator Service to help students find compatible roommates. The Off-Campus Center is located in the Residence Life Office and is open Monday through Friday from 8:30 a.m. to 5 p.m.

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 early June, and two for freshmen in mid-July. Summer programs concentrate on pre-registration, academic information, and support services provided by the Institute. 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 Orientation, new students receive a copy of **FACTS,** 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 $5 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.

Student Clubs and Organizations

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 from the nine colleges and the four RIT-operated apartment complexes. 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 basement of the College-Alumni Union, is a place for the off-campus student to relax. OCSA also publishes a newsletter twice per quarter that contains beneficial off-campus news.

If you are interested in getting involved, stop in at the OCSA office in the basement of the Union, or call 475-6680 for more information.

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 become members of the RIT Student Directorate through payment of 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.

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, 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 co-curricular activities, features the 525-seat Ingle Auditorium; a selfservice bookstore; a complete gameroom for bowling, billiards, foosball, and electronic games; a uni-sex hairstyling salon; 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. In addition to offices for the staff, there are the offices of Career Education, Special Events, Student Affairs, Orientation, Chaplains, Complementary Education, College Activities Board, Student Directorate, WITR radio station, Student Television Systems, *Techmila, Reporter,* Off-Campus Student Association, and other student organization offices.

The College Activities Board
The College Activities Board, which is composed of students, faculty and staff advisors and a College-Alumni Union 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.

Social events
Major social events on the activities calendar include Spring-In, Homecoming, and Winter Weekend. Many other dances, parties, speakers and events are sponsored by the College Activities Board, the Residence Hall Association, the Greek Council, special interest clubs of many kinds, and departmental and professional associations such as Alpha Chi Sigma, Delta Lambda Epsilon, Delta Sigma Pi, and Sigma Pi Sigma. Two national sororities and nine national fraternities offer social activities and promote high scholastic and social standards among members.

Student professional associations
A number of national technical associations have student affiliate chapters on the RIT 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 are both professional and social in purpose.

Student publications
RIT students produce some of the most professional collegiate publications in the country. The Student Activities Fee helps to finance most student publications, distributed to all full-time students.

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 quarterly.

A student handbook is issued early in the year, as a cooperative effort of students and staff. This includes the student directory listing addresses, telephone numbers, and other information about students. This becomes a handy year-long reference of activities and people.

These publications draw their talented staffs—artists, photographers, writers, managers and printers—from the entire student body.

Religious activities
The religious program is voluntary, active and enlightened, designed to minister to the varieties of religious faith in a responsible, attractive manner among future-oriented students. Chaplains representing the three major religious groupings maintain offices on the campus. They are available for pastoral counseling, advisory work, teaching, and sacramental ministries. There is a regular schedule of religious services on campus. Churches in the area have shown interest in establishing relations with students, and transportation to and from services may be arranged.

Hillel Foundation, Catholic Campus Ministry, and Lutheran Campus Ministry have local branches on campus, and other religious organizations are welcome to use the facilities in the College-Alumni Union. Representatives of these campus organizations form the RIT Office of Campus Ministry.

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 which are designed to achieve these objectives.

Performing arts
The Division 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. A combination of RIT and NTID students, faculty and staff, and community members who perform a variety of music at various sporting events, awards ceremonies, dedications and student activities. New members always welcome.
- 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. Members of the RIT Time Stompers perform music of the 1890's - 1940's, Dixieland, jazz and danceband styles. The group performs at various events including receptions, dinner parties, and ceremonies.
- RIT Trombone Choir and RIT Flute Choir. These ensembles perform a 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 whe perform contemporary music for RIT and community events.
- Guest artists are invited to perform in the NTID Theatre. A dance company, a professional mime, anc the National Theatre of the Deaf are typical presentations each year

Physical Education at RIT

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 day-school 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 day-school 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 excused from physical education during the season of participation. This experience will generate P.E. credit.

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's 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 is conducted by the entire Physical Education staff in the main gymnasium within a week following academic registration. Hours for registration are 7:00 a.m. - 3:00 p.m. 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:

Cardio and strength activities
Aerobic Dance, Army Conditioning Methods, Bicycling, Circuit Training, Conditioning, Fitness for Life, Jogging, Judo, Karate, Kung Fu, ROTC, Swimming for Fitness, Weight Training, Yoga.

Recreation and sports activities
Afro-Caribbean Dance, Archery, Badminton, Ballroom Dance, Basketball Officiating, Billiards, Bowling, Canoeing, Cross Country Skiing, Dance Performance I & II, Disco Swing Dance, Diving, English Horseback, Fencing, Fishing, Frisbee, Golf, Hunting, Ice Skating, Juggling, Modem Dance, Outdoor Living, Racquetball, Scuba Diving, Self-Defense/Women, Sign Dance, Skiing (downhill), Swimming, Tennis, Water Polo, Western Horseback.

Team activities
Basketball, Field Hockey, Ice Hockey, Lacrosse, Soccer, Softball, Touch Football, Volleyball.

Life support and safety programs
Advanced First Aid, Care & Prevention of Athletic Injuries, CPR & Multi-Media First Aid, Emergency Medical Tech Training, Life Saving, Water Safety.

Intramural Activities at RIT

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, inner-tube water polo, bowling, tennis and golf.

Recreation at RIT

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 equipment cage provides quality equipment for recreation, physical education instruction and intramural needs and interests. Services offered include: general information center, issuance of guest passes, assignment of lockers, towel service, 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

At RIT, intercollegiate athletics is an integral part of the total educational environment. Participation on a varsity team or providing support as a spectator or booster greatly enhances campus spirit and student life. In recent years RIT has enjoyed tremendous success in intercollegiate athletics, both on the regional and national levels.

In fall, varsity competition is offered in men's and women's soccer, volleyball, cross country and women's tennis. Men's soccer, under Coach Doug May, has qualified for the National Collegiate Athletic Association (NCAA) Division III championships and won 29 dual contests over the past two seasons. Women's tennis has been extremely successful, winning 68 and losing only nine matches over the past seven years. In 1983 the women tied for first place in the New York State Association of Intercollegiate Athletics for Women (NYSAIAW) Championship. RIT's consecutive win streak was halted at 30 last year, covering a three-year span. Ann Nealon has coached the team since its inception in 1971.

Each year the cross country team qualifies runners for the NCAA Division III Championship. In 1983 the harriers captured the Independent College Athletic Conference (ICAC) title for the first time in 11 years. The Tigers boast seven consecutive winning seasons accounting for an 89-15 record. Peter Todd has coached the team to a 206-72 record over 19 years.

Women's soccer is the newest varsity sport at RIT. Last season the team finished with a 4-8-3 record under Coach Paul Carcaci.

Winter competition features basketball, men's and women's hockey, men's and women's swimming and wrestling. Basketball enjoys a strong tradition covering more than half a century. The Tigers annually compete in the Lincoln First Tournament and have won five tourney titles. Bob McVean took over as head coach in 1983-84.

Men's hockey has generated excitement on the RIT campus. In 1982-83 the Tigers won the NCAA Division II title, giving the Institute its first national team championship in 154 years of existence. In 1983-84, RIT won the Eastern College Athletic Conference Division II crown and finished third in the NCAAs. The Tigers have won two consecutive New York College Hockey Association (NYCHA) championships. Goaltender Dave Burkholder, center Chris Johnstone and defenseman B.J. Hull were named All-American in 1984. RIT also boasts three consecutive Rookies of the Year in the ECAC West Region, including Johnstone, Hull and Ritchie Herbert.

Men's swimming continues to excel on the national level. In 1983-84 the Tigers had their best showing ever in the NCAAs, finishing in ninth place. In the past nine years, RIT has produced 36 swimming Ail-Americans, including Barry Zacharias, who became the first national champion in RIT swim history by winning the 400-yard individual medley. Zacharias was All-American eight times in his four years. Jim Shank has earned five All-American certificates in two years of competition. Coach John Buckholtz has guided the finmen to six ICAC championships in 13 years.

The women's swimming program is equally impressive. In 1983-84 the women placed 11th in the nationals with 11 Ail-American honors. Coach Kathy Robords has a 23-2 record over the past two seasons. Debbie Dourlain, Mary Beth Breckenridge and Judy Baker lead the All-American entourage.

Wrestling has been a part of the RIT scene for 57 years. Earl Fuller, coach the past 36 seasons, has produced four Ail-Americans, including Darrell Leslie who won the national crown at 142 pounds in 1982-83. Leslie was a four-time All-American.

Spring sports include lacrosse, basketball, men's tennis, softball and men's and women's track. Lacrosse has won two straight ICAC titles under Bill Tierney, and qualified for the nationals in 1983. Three players were named All-American in 1983, including Keith Vadas, Spike Decker and Shawn McAvoy.

Baseball has enjoyed success over the years with several players signing professional contracts. Mickey Street (pitcher) and Jeff Hall (outfielder) are currently playing for the Cleveland Indians and Boston Red Sox organizations. Men's track, under Pete Todd, has won 15 straight Upper New York State titles. Todd has produced 12 Ail-Americans, including Mark Stebbins who won two national crowns in the 400-meter intermediate hurdles. Stebbins was RITs first national champion in any sport (1976). Chris Budynas earned All-American honors in 1983 with a second place finish in the javelin.

Women's track is relatively new at RIT and last year qualified four runners for the nationals. A total of 13 school records fell during the 1983 campaign. Ron Hardy took over the program in 1984. Under Janet Assenheimer, softball is growing rapidly at RIT. The Tigers annually host the Rochester Area Colleges (RAC) Invitational and won the title in 1982.

In addition to the NCAA, ECAC, ICAC, NYSAIAW and NYCHA, the Tigers are members of the United States Intercollegiate Lacrosse Association (USILA). All teams compete in Division III and are governed by NCAA and ECAC rules. A student must be full-time (minimum 12 credit hours) and making satisfactory progress toward a baccalaureate degree to be eligible for intercollegiate athletic competition.

In addition to varsity team participation, students may become involved in intercollegiate athletics in a variety of ways. Managers and scorekeepers are always needed. The Institute has a Tiger Pep Band, a precision dance corps (known as the Tigerettes), and a booster support group (TIGERS, Inc.). We invite you to join a winning tradition and follow the Tigers throughout the year.

Resources for RIT Community Living

Daycare
The Horton Child Care Center is a preschool and kindergarten for children of students, faculty and staff at RIT. It is located in Riverknoll housing, adjacent to the academic buildings. The center offers all-day and half-day programs for children ages 2 years 9 months through 5 and has an after-school care program for children ages 6-7. It is open all four academic quarters. The summer quarter has a day camp format and is open to children 2 years and 9 months through 7. Some tuition aid is available.

Inquiries and application can be made by writing the Director, Horton Child Care Center, 85 Kimball Drive, Rochester, NY 14623, (716) 424-1244.

Identification card
All day students and evening students (CCE) are required to have an official Institute Identification Card. Your card must be carried with you at all times, and loss reported at once to the I.D. Office, 475-2125.

All I.D. cards must be validated quarterly. Replacement of lost cards is $5.

Automobile registration
All New York State motor vehicle traffic laws are in effect on the RIT campus. RIT vehicle regulations supplement 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. There is no fee attached to vehicle registration.

Failure to register a vehicle parked on campus will result in a $10.00 fine. Fines for other infractions of regulations are $5.00 and $10.00.

Questions regarding parking regulations should be addressed to the Traffic Coordinator at (475) 2074.

Campus Safety Department
The Campus Safety Department is a professional security agency that serves and protects the college community 24 hours a day, 7 days a week. While this staff constantly patrols all campus areas, RIT does not assume liability for lost or stolen personel effects of students, faculty or staff. We therefore urge you to maintain an insurance policy on your own through your family insurance program. The Campus Safety Department provides services in: fire safety, criminal investigations, and lost-and-found property services.

You can contact the Campus Saftey Department at these numbers:

General Information	(475) 2853
Vehicle and Traffic Questions	(475) 2074
Escort Service	(475) 2853
Emergency	(475) 3333
TTY	(475) 6654

The Campus Safety Offices are located in the Grace Watson Dining Hall, building number 25.

RIT bookstores
Textbooks, school supplies, art and design supplies, and photographic equipment may be purchased at the RIT bookstore. Also in stock are general reading material and insignia items. An estimate of expenses likely to be incurred in a specific area of study may be obtained by contacting departmental offices. The major portion of the expenditures for textbooks and supplies is made at the beginning of each quarter (see also "Books and Supplies" on page 7). For hours of operation and special events call the Bookstore Infoline at 475-6033.

Alumni Association

The RIT Alumni Association is an organization of more than 45,000 graduates. All graduates are automatically members of the association, which is governed by the National Alumni Council. Council members come from all parts of the United States; one member is from Mexico.

The objectives of the association are to advance the growth and development of RIT through individual and group endeavors within industry and the community, to support the fund raising objectives of the Institute; to foster beneficial relationships among alumni, students and the Institute; and to encourage outstanding academic and extracurricular achievement by the undergraduates.

There are a number of services available to alumni, including a travel program to destinations throughout the world; the *Alumni News,* published four times a year; use of the library and athletic facilities (with ID card); help from The Center for Cooperative Education and Career Services in locating a job, and many social events, including Homecoming.

There are also many programs within which the alumni work with the Institute's various departments. These include admissions, placement, and alumni-student interaction programs. Alumni in many metropolitan areas throughout the country participate in activities of service to the Institute. The Institute recognizes the value of its alumni and places a strong emphasis on their participation in planning for the future.

Alumni may assist the financial development of the Institute by giving to the RIT Fund, which provides needed support for student financial aid and other operations of the Institute.

Alumni House, located at John Street and Wiltsie Drive, houses the Office of Alumni Relations and is the center of alumni activity on campus. The office maintains the alumni records, assists in conducting the business of the association, and serves as the communications center and clearinghouse for all alumni activities. Alumni are always welcome at Alumni House.

Student Academic Development

Learning Development Center

RIT students have a unique opportunity to improve their reading efficiency, study techniques, vocabulary mastery, effective listening and critical thinking abilities, mathematical understandings, computation skills, writing competence, and general facility in the uses of the English language through individual or group instruction provided by the center. There is also instruction for students who speak English as the non-native language. In addition, the center makes arrangements for peer tutoring in most college level courses. Special programs, built around student requests, are provided for student groups and clubs as well. In cooperation with the Counseling Center, the Learning Development Center also provides counsel, diagnosis, and corrective development background instruction for students not working up to capacity or whose achievement records are unsatisfactory because of needs in basic academic areas.

Consultation, testing, and instructional services are free to all RIT students with the exception of some ESOL (English for Speakers of Other Languages) instruction.

In addition to these programs 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; an instructional program for students who have been suspended or are liable to suspension from college for academic reasons, and an ESOL (English for Speakers of Other Languages) program for students who do not meet the RIT admissions requirements on the TOEFL (Test of English as a Foreign Language) or who want to improve their English skills.

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 affective 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.

Diagnostic testing includes measurements of aptitude, interest, achievement and personality. 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.

This program generally includes a content course, LDC instruction and academic counseling. The work is based upon 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.

College Restoration Program

The College Restoration Program is a specialized program of instruction for students who have been suspended from college.

A course of action can be recommended only after the reason for academic difficulty has been established. If after diagnostic testing, which includes measures of aptitude, interest, achievement and personality, it is determined that CRP can be helpful, a very structured program including content courses, LDC instruction and counseling is arranged.

The student meets weekly with an academic advisor to clarify directions and goals, to discuss relationships between the skills courses and review progress. The student is also provided the opportunity to discuss problems, their causes and effects, with an RIT counselor at the Counseling Center if he or she desires.

The entire program is designed to strengthen the student's self-confidence. Successful completion of this program should qualify students for readmission to the college or department of their choice or for entrance to 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.

ESOL Program (English to Speakers of Other Languages)

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. 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 I-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.

In addition to the full-time study program, students may register for one or more ESOL courses. Arrangements may also 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.

In the ESOL writing lab matriculated students receive help with assignments, learn to edit their work, and review English grammar. This service is provided free of charge.

For more information about ESOL Program offerings come to the Learning Development Center or call 475-6684.

Foreign language instruction

The ESOL Department has recently initiated 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/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 Learning Development Center at 475-6684 or come to the ESOL office for an application.

Career and academic advising

Career and Academic Advising will help you plan and carry out a sound program of study at RIT. Because of its importance, you have several specialized sources for this planning.

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, you will be assisted in developing your curriculum plans, determining the requirements for graduation, and interpreting your academic needs. It is the students' responsibility, however, to seek out advising and take an active role in the maintenance of their academic records. When a specific advisor is assigned to you, he or she is a specialist in your career field. Don't hesitate to schedule regular meetings, ask questions and discuss your hopes for the future.

In the event you wish to re-examine your choice of academic major, or if you have questions about the appropriateness of a transfer to a new major, the Counseling Center can assist you in clarifying your educational and vocational plans. The planning process may include individual or group counseling, testing of aptitudes, interests and personality, interaction with SIGI (a computer-assisted career guidance system), and/or using the resources of the Career Resource Center. A counselor is available on a walk-in basis from noon and from 1-4, Monday through Friday.

The Center for Cooperative Education and Career Services is another resource of the Institute, available particularly in fulfilling cooperative education requirements in your major field, and securing initial employment at the end of your program at RIT.

The support services at RIT are directed to meet your career and academic needs. If you need assistance in finding the appropriate office, call the Coordinator of Academic Advising at ext. 6665.

Academic Services Supports Instruction

Academic Services consists of four major areas that support instruction at RIT: Instructional Media Services, Wallace Memorial Library, Information Systems and Computing, and The Office of the Registrar. The goals of Academic Services are to improve and assist the instructional process by providing a full range of computing, media, library, and registration services. Specific functions of the areas include: providing and producing audio visual materials and providing equipment, facilities and assistance needed for their use (Instructional Media Services); selecting, distributing and providing bibliographic services for the instructional use of printed materials (Wallace Memorial Library); administrative and academic computing support for the entire institution (Information Systems and Computing); and the full services of the Office of the Registrar, described on page 16.

Instructional Media Services

Instructional Media Services provides a complete range of audio-visual support services to faculty and students. IMS consists of a Television * Center, Production Services, Audio Visual Distribution Services and a Media Resource Center.

Television
This center is utilized as both a distribution system for delivery of instructional media to locations throughout the campus and as a production system to create a wide range of instructional television programming. A professional staff of producer/directors and graphic artists and engineers are available to aid faculty in the development of programs ranging from complete courses to short modules for use within a course. The center has a wide variety of video equipment including portable units for remote location programming and fully equipped color studios. The Television Center also supports RIT cable television course efforts.

Production Services
A professional staff of producer/ designers, artists and photographers are available to assist faculty in creating instructional media. The services are at two levels: 1) General Services to meet the daily routine needs of faculty and students, and 2) Producer Services to aid the faculty in development of more sophisticated mediated instruction. In addition, consultation and advisement is provided in the selection, purchase and use of television, photography, graphics and audio.

Audio-Visual Distribution Services
Faculty and students are provided access to the large number of instructional materials available from sources throughout the country. Research assistance is provided to search out and recommend the best of these materials. Equipment and projectionist services are also available as well as the loan of a variety of audiovisual hardware.

Media Resource Center
This center, located just inside the library entrance on the main floor, contains a variety of nonprint media and audiovisual equipment for individual student use. In addition, the center contains an outstanding collection of over 75,000 slides as well as viewing facilities for an expansive media collection consisting of motion pictures, video tapes, multi-media units and interactive videodiscs.

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 RITs Wallace Memorial Library, he or she will not only find a variety of print and non-print forms in which to locate information but also a unique on-line computer catalog where the search for references may be made.

Particularly adapted to an institution of technology and the arts and sciences, the Wallace Memorial Library contains, in addition to material in the usual form of books, magazines, newspapers, and pamphlets, material in the form of microfilm, microfiche, motion pictures, recordings, audio and video cassettes, slide/tapes and filmstrips. RIT has the largest microfilm collection and the greatest use of non-print media of any area college library.

The library is a true multi-media learning center with expanded services and innovative procedures to increase its usefulness. To assist the students in the use of all these resources, reference librarians are on duty during the week and on weekends. Located throughout the three floors of the library are more than 700 student stations, including individual study carrels and group study rooms.

During the year student work in art and photography is exhibited in display gallery areas. Outstanding student art and photography work is permanently displayed within the building. Several lounge areas also are located throughout the building.

The library contains a special collection of materials on the deaf to serve the National Technical Institute for the Deaf and to support research by anyone wishing to pursue studies in the problems of deafness. A Special Collections area houses the archives, rare books, faculty writings and RIT theses, and a separate Chemistry Library houses selected science material.

In addition the library offers computerized searching of information data bases and interlibrary loan service. Use of these services provides access to virtually all publicly available printed material.

The regular hours for the library are: Monday - Friday, 7:30 a.m. - 11 p.m.; Saturday, 9 a.m. - 7 p.m.; Sunday, 10 a.m.-11 p.m. Special hours for exam time, breaks, and holidays are posted and publicized.

Information Systems and Computing

The mission of ISC is to provide all operating units of the Institute with computing systems and services that

are necessary for their efficient operation in the most effective and economical way.

The department maintains extensive facilities and staff to assist in the Institute's instructional computing efforts. An IBM/370 main frame and VAX 11-780 complex, numerous micro-computers and computer terminals are available to faculty and students with academic computing needs. User computer centers are maintained in the Gleason, Lowenthal, Ross and Watson buildings with an additional micro-computer laboratory in the Computer Center (Ross) Building. A staff of professional software specialists is also available for consultation. Assistance in every aspect of instructional computing is a high priority of Information Systems and Computing.

Faculty and Program Development Supports Better Teaching

Faculty and Program Development provides an array of services designed to enhance the quality and effectiveness of RITs educational programs.

Its specific functions include searching out and implementing ways of improving courses of instruction and curriculum design. This is achieved through cooperative efforts with the faculty in the planning, design, implementation and evaluation of learning systems appropriate to the Institute. Faculty and Program Development works closely with the colleges in implementing the Institutes' academic computing objectives and, in general, supports the use of innovative instructional methods and technologies.

In addition, the department assists individual faculty in gaining additional professional and educational experience. It coordinates the Institute's faculty career development programs such as national and international exchanges and leaves.

Faculty and Program Development supports the Institute's numerous faculty and instructional development programs.

College of Applied Science And Technology

Dennis C. Nystrom, Dean

Organized in 1973, the College of Applied Science and Technology incorporates the School of Engineering Technology; the School of Computer Science and Technology; the School of Food, Hotel, and Tourism Management; the Department of Packaging Science, the Department of Instructional Technology; and the Department of Career and Human Resource Development. The college has programs at the associate baccalaureate, and master's degree levels.

The School of Engineering Technology has primarily upper-division programs accepting transfer students with appropriate associate degrees. The exception is the school's new program in computer technology, which accepts freshman students. 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. production, construction, energy, and environmental concerns.

The School of Computer Science and Technology, started in 1971, is one of the largest schools of computer science in the nation. All programs in the school can be entered as a freshman or as a transfer student. To support its laboratories, the school is equipped with two Vax 11/780's, a PDP 11/34 and an 11/70, and an array of mini, micro, and graphics computer facilities. Most recently the school added five new Motorola 68000 based super micro computers. Cooperative education is required of all 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 its 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 country. 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 obtain direct experience in creating and running multi-image presentations requiring 15 or more slide projectors.

The Department of Career and Human Resource Development offers the master's degree program with an emphasis on human resource long range forecasting and planning.

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. The extensive computer facilities mentioned previously are totally dedicated to academic support. 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 technology program, the School of Engineering Technology and the Department of Instructional Technology (audiovisual communications) function as upper-division units. Holders of an appropriate associate degree from a community, junior, or technical college (or other similar two-year institutions) will receive 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 co-operative educational program.

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

The School of Computer Science and Technology 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 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 specialities. All are committed to rigor and academic excellence.

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 of their particular field, assuring that their 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 RITs admission requirements, procedures and services is included In detail on pages 14-15 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 and Technology, 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 research programmers, systems programmers, applications specialists, or computer systems analysts. Degrees granted: AAS-2 year; BS—4-5 year.

Information Systems: The computer systems option is designed for students interested in business applications programming, systems analysis, and information systems design. The systems software option prepares students for careers as systems programmers or systems software specialists. Degree granted: B. Tech—4-5 year.

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-management or technical—prepare students for initial employment in such areas as management, sales, marketing, purchasing, structural design, product development, and the technical and engineering phases of production and package development. Degree granted: BS—4 year.

***Civil Engineering Technology:** A program providing the broad range of skills which allow graduates to select from employment opportunities in environmental, construction and other civil professions. The program allows students to pursue career interests through the selection of technical electives. Degree granted: B. Tech—3 year with co-op.

Computer Technology: A program of electronic hardware and computer software as applied to digital computers. Courses emphasize current technology in computers and graduates are prepared for employment in designing, manufacturing, and servicing computer systems. Transfer into the program with junior standing is available for those with associate degrees in appropriate fields. Degrees granted: AAS—2 year; B. Tech.—5 year with co-op.

***Electrical Engineering Technology:** Early emphasis in this program is on further mastery in electronics circuit theory, and materials for design and mathematics. Later courses are elective options in electrical power, communications, and digital computer design. Degree granted: B. Tech.—3 year with co-op.

***Mechanical Engineering Technology:** Early emphasis in this program is on further mastery of mechanics, electricity, and mathematics. Later courses are elective in mechanical design and related areas. The practical and applied are emphasized. Degree granted: B. Tech.—3 year with co-op.

***Manufacturing Engineering Technology:** A program to prepare persons to apply sophisticated techniques to production processes. Courses will emphasize computer aided manufacturing, productivity, and the related activities required to enter this increasingly complex field. Degree granted: B. Tech.—3 year with co-op.

***Energy Engineering Technology:** A program to prepare specialists in the field of residential, commercial and industrial energy management and control. Degree granted: B. Tech.—3 years with co-op.

***Audiovisual Communications:** Prepares students with production and design abilities to use various media. The graduate becomes an audiovisual communications specialist or an audiovisual producer. Degree granted: BS-2 year.

Food, Hotel and Tourism Management: Prepares graduates for managerial positions in restaurants and other food service operations and hotels. The Hotel and Resort Management option develops comprehensive skills that prepare students for management training positions in the hotel/resort industry. The Travel Management option prepares graduates to plan, arrange, and coordinate travel for business and industry, wholesale tour operations, travel agencies and convention bureaus. Degrees granted: AAS—2 year; BS—4 year.

Dietetics: Graduates can develop within a broad spectrum of interests from service to management positions in hospitals, nursing homes, and in the growing field of community nutrition (sponsored by national, state and local agencies). Also, large national restaurant chains often have dietitians in responsible staff positions. Degrees granted: AAS—2 year; BS—4 year.

"Upper division program only

Freshman Admission Requirements **Transfer Admission with junior standing**

Program†	Required High School Subjects*	Desirable Elective Subjects	Two-Year College Programs	Desirable Minimum GPA
Computer Systems **Systems Software Science**	First two years available at many two year colleges.		Data processing, business, or equivalent computer technology	2.6
Computer Science	Elem. Algebra; Inter. Algebra Trigonometry Plane Geometry Physics or Chemistry	Additional mathematics and science	Computer science, engineering, mathematics and science.	2.6
Packaging Science	Elem. Algebra; Inter. Algebra '1 year any science Additionally for the Technical option; Plane Geometry; Trigonometry	Additional mathematics, science	Packaging science, business administration, engineering technology, science, or equivalent	2.3
Civil Engineering Technology	First two years available at many two year colleges.		Civil, construction technology, or equivalent.	2.3
Computer Technology	Elem. Algebra Inter. Algebra Plane Geometry Trigonometry Physics or Chemistry	Additional mathematics, science	Computer technology Electronics technology	2.3
Electrical Engineering Technology	First two years available at many two-year colleges and RIT's College of Continuing Education.		Electrical technology, electronics technology or equivalent.	2.3
Mechanical Engineering Technology	First two years available at many two-year colleges and RIT's College of Continuing Education.		Mechanical technology, drafting and design technology or equivalent.	2.3
Manufacturing Engineering Technology	First two years available at some two-year colleges and RIT's College of Continuing Education		Manufacturing technology, mechanical technology, drafting & design technology or equivalent.	2.3
Energy Engineering Technology	First two years available at some two-year colleges		Air conditioning technology, energy technology, solar technology, environmental systems technology or equivalent.	2.3
Audiovisual Communications	First two years available at some two-year colleges.		Audiovisual technology, film/television production, media production, communications, or comparable programs.	2.3
Food Management, Hotel and Resort Management Option, Travel Option	Elem. Algebra; Inter. Algebra; 1 year chemistry preferred	Additional mathematics and science	Food service administration; hotel-motel management, travel management or equivalent.	2.3
Dietetics **a) General-Traditional Plan IV** **b) C.U.P.**	Elem. Algebra; Inter. Algebra; 1 year chemistry	Biology; additional mathematics	Dietetics or equivalent.	2.3

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

Department of Instructional Technology

Clint Wallington, Director

Bachelor of science in audiovisual communications

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-a-dozen. 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. 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 audiovisual communications.

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

Yr.	Audiovisual Communication, BS degree	Qtr. Credit Hours		
		FALL	WTR.	SPG.
3	ICIC-401 Message Design	4		
	ICIC-430 Audiovisual Presentation Design	4		
	ICIC-489 Audio for AV Presentations	4		
	ICIC-440 Audiovisual Program Design I		4	
	ICIC-424 Visual Production Technique		4	
	ICIC-450 Audiovisual Design II			4
	ICIC-510 Writing for AV Programs			4
	GLLC-402 Conference Techniques		4	
	SBIG-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	4	4	4
	Physical Education	0	0	0
4	ICIC-595 Senior Project I	2		
	ICIC-405 AV Seminar		2	
	ICIC-596 Senior Project II		2	
	Two additional Contemporary Science courses (course numbers as listed in year 3)		4	4
	AV Production Elective	4		
	Management Elective			4
	Liberal Arts	4		8
	Liberal Arts		2	
	Professional Elective			
	Free Elective	4	4	
	Physical Education	0	0	0

Objectives

The primary objective of the audiovisual communications program is to fully prepare qualified individuals for professional employment as audiovisual communications specialists. The program emphasizes the technical skills needed to enter the job market and the creative and management skills required for career advancement. To help 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 which have one or more audiovisual presentations. It includes other activities leading to the communications goals of the program. Featured as a 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 also meet the writing competency requirements of the program. In addition to the professional courses, courses in liberal arts, sciences, and physical education are required.

Audiovisual production electives

ICIC-503 Practicum in Production
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
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 and Technology

Wiley R. McKinzie, Director

The School of Computer Science and Technology offers programs leading to BS, B. Tech., and MS degrees. The school accepts both high school graduates and two-year college graduates as freshmen and upper division classmen, respectively. All degree programs offered in the School of Computer Science and Technology are designed to meet the staffing demands of industry, government, and educational institutions. In addition to theoretical foundations, practical aspects of computer science or computer technology are emphasized. The opportunity for hands-on experience with computer systems is provided and encouraged. Graduates of the School of Computer Science and Technology are fully prepared for employment in computer hardware and software industries and computer applications departments of other major industries, or enrollment in graduate schools to pursue advanced degrees.

Computer science and technology covers a very wide spectrum of the field of computing. A computer scientist or technologist can specialize in areas such as computing theory, scientific computing, information systems, systems software, numerical analysis, operating systems, database systems, programming languages, and systems analysis, to name just a few. It is important to note that programming is merely a tool, albeit an important one, and is not itself computer science. An undergraduate computer science technology student is required to take a certain number of computer science courses that will provide both a solid foundation in computing and specialization useful for employment.

Yr.	Computer Science program, BS degree	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	ICSS-202 Introduction to Computer Science	4		
	ICSP-241 Programming I-Algorithmic Structures	4		
	ICSP-242 Programming II-Data Structures		4	
	ICSP-243 Programming III-Design and Implementation			4
	SMAM-251, 252, 253 Calculus	4	4	4
	SPSP-311 University Physics (Mechanics)			4
	GLLC-220 English Composition	4		
	Liberal Arts		8	4
	Physical Education Electives	0	0	0
2	ICSP-305 Assembly Language Programming	4		
	ICSS-315 Digital Computer Organization		4	
	ICSS-325 Data Organization and Management		4	
	Professional Computer Science Elective [1]			4
	SPSP-313 University Physics (Electricity and Magnetism)	4		
	SMAM-305 Calculus	4		
	SMAM-351 Probability		4	
	SMAM-352 Applied Statistics I			4
	SMAM-265 Foundations of Discrete Mathematics			4
	Liberal Arts	4	4	4
	Physical Education Electives	0	0	0
3	ICIC-444 Technical Writing for Computer Scientists	2		
	ICSS-440 Operating Systems	4		
	ICSS-420 Data Communication Subsystems	4		
	ICSP-450 Programming Language Concepts	4		
4	Computer Science Concentration [2]	12		
5	Computer Science Electives [3]	16		
	Minor [4]	18-20		
	Liberal Arts	26		
	Free Electives [5] ..'.	8		
	Cooperative Education (4 quarters)			

[1] *The professional computer science elective in the second year must be chosen from the following courses:*
ICSP-306 Systems Programming Fundamentals
ICSP-307 Business Applications Programming
ICSP-319 Scientific Applications Programming
[2] The computer science concentration consists of one of the following course sequences:
Computer Information Systems
ICSS-435 Systems Specification, Design and Implementation
ICSS-485 Database Concepts
ICSP-488 Programming Systems Workshop
Systems Software
ICSS-520 Computer Architecture I
ICSS-540 Operating Systems Laboratory
ICSS-580 Language Processors
Computer Science Theory
ICSS-470 Finite State Machines
ICSS-480 Formal Languages
ICSS-515 Analysis of Algorithms
[3] *Computer science courses may be taken as computer science electives except as noted in the Course Description Catalog.*
[4] *A minor consists of a set of coherent courses giving the student significant expertise in an area other than computer science.*
[5] *Any course open to computer science majors may be taken as a free elective.*

Programs
The School of Computer Science and Technology offers the following programs:

1. A computer science (BS) degree program with several upper division specialization tracks.
2. An upper division information system (B. Tech.) degree program with options in computer systems and systems software science.

All students in the school are required to obtain credit for one year (four quarters) of cooperative education prior to graduation. To help insure 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.

Computer science program
The computer science program of the School of Computer Science and Technology is designed for students who are interested in both the technical aspects and the underlying mathematical theory of the field. Many employers look for students who not only are good scientists, but who also understand the tools and techniques of mathematics, science, and business. Thus the BS program is for the mathematically adept student who wishes to become a computing professional with knowledge of relevant applications areas. This program will also be attractive to students transferring to RIT with an associate degree in computer science,

or with an associate degree in data processing backed up by significant course work in mathematics and science.

The program of study in computer science can be broken down into five major areas:

1. Computer science—required and elective courses in the areas of program development, computer organization, and systems software. Each student must complete a three-course concentration to attain advanced knowledge in a specialized area.

2. Mathematics and science—each student must take seven courses in the areas of calculus, physics, probability and statistics, and discrete mathematics.

3. Liberal arts—courses in language and literature, humanities, social science.

4. Minor—a coherent set of courses designed to provide experience in a discipline other than computer science.

5. Free electives—two courses chosen by the student based on his or her personal preferences.

The primary goal of the computer science program is to prepare well-rounded graduates who possess significant skills in mathematics, computer science, and at least one other discipline. Graduates of the computer science program are fully prepared for entry into professional computing positions or for continued education in graduate school.

Information systems

The upper division information systems program of the School of Computer Science and Technology offers two options leading to the bachelor of technology degree. Course work reflects how these options are more specialized and directed toward particular areas than is the case for the bachelor of science program.

The options of this program are structured so that approximately 50 percent of the course work is in computer science, 25 percent is in liberal arts and sciences, and 25 percent is in a professional elective area chosen outside computer science from such areas as business, mathematics, and engineering technology. This additional course work permits students to tailor their overall programs to a computer application or technical area of their own choosing.

The liberal arts portion of the program consists of basic course work in language and literature, the humanities, and the social sciences. Students in this program are also required to take an applied calculus sequence and a course in statistics. These mathematics courses provide the necessary background for dealing with many applications of computer science and technology. Students who desire a more intensive background in mathematics can take the calculus, probability, and statistics sequence required in the BS program, applying the extra credits towards the professional elective requirements.

Students transferring to RIT with an associate degree in data processing and related areas will find the bachelor of technology program particularly attractive. Except in unusual cases, these students can expect to receive both full transfer credit for their AAS course work and a balanced mapping of these courses into the required curriculum. Since most students transfer into the program with junior standing, they are normally eligible for co-operative education after one quarter of course work at RIT.

Most graduates of the information systems program go on to full-time employment in their chosen area of computer science. Some, however, choose to continue on to graduate school; the appropriateness of their undergraduate degree for graduate study largely depends on the composition of their professional elective area.

Computer systems option

The goal of this program is to provide students with the skills and technology fundamental to a career in business applications computing. Graduates from this program must master the principles and skills which underlie the disciplines of business data processing and data manage-

Yr.	Computer Systems option, B. Tech. degree	Qtr. Credit Hours		
		FALL	WTR.	SPG.
	ICSS-202 Introduction to Computer Science	4		
	ICSP-241 Programming I-Algorithmic Structures	4		
	ICSP-242 Programming II-Data Structures		4	
	ICSP-243 Programming III-Design and Implementation			4
1	SMAM-214, 215 Introductory Calculus [3]	3	3	
	SMAM-309 Statistics [3]			4
	GLLC-220 English Composition	4		
	Liberal Arts		8	8
	Physical Education Electives	0	0	0
	ICSP-305 Assembly Language Programming	4		
	ICSS-315 Digital Computer Organization		4	
	ICSS-325 Data Organization and Management		4	
	ICSP-307 Business Applications Programming			4
2	Computer Science Elective [1]			4
	BBUB-420 Principles of Management	4		
	BBUA-301 Financial Accounting		4	
	Professional Electives			8
	Liberal Arts	8	4	
	Physical Education Electives	0	0	0
	ICIC-444 Technical Writing for Computer Scientists		2	
	ICSS-435 Systems Specification, Design and Implementation		4	
	ICSS-420 Data Communication Systems		4	
	ICSS-485 Database Concepts		4	
3	ICSP-488 Programming Systems Workshop		4	
4	Restricted Computer Science Electives [2]		8	
5	Computer Science Electives [1]		32	
	BBUQ-334 Management Science		4	
	Professional Electives		20	
	Liberal Arts		14	
	Cooperative Education (4 quarters)			

[1] Computer Science courses may be taken as Computer Science Electives except as noted in the Course Description Catalog.

[2] *Restricted Computer Science Electives lor the Computer Systems option:*
Students must take one course from Group A and one course from Group B.
Group A: Systems Software—Software Emphasis
ICSP-450 Programming Language Concepts
ICSS-440 Operating Systems
ICSS-530 Fundamentals of Discrete Simulation
ICSS-570 Introduction to Computer Graphics
Group B: Systems Software—Hardware Emphasis
ICSS-565 Computer Systems Selection
ICSS-520 Computer Architecture I
ICSS-521 Introduction to Microprocessor Systems

[3] *Mathematically inclined students may satisfy the mathematics requirment by substituting SMAM-251, 252. 253, 351 and 352 lor the listed SMAM courses. The additional courses will be counted as professional electives.*

ment. These include hardware organization and assembly language, data structures, file management, business applications programming, system specification and design, data communications, and database design and implementation.

Positions in business data processing and data management not only require a strong computing background, but also a solid set of analytical and business skills. For this reason, students are required to take a basic sequence of courses from the College of Business and the Department of Mathematics. The student may continue his or her professional elective concentration in either business or mathematics, or may choose yet another relevant discipline at RIT.

The computer systems curriculum is designed to facilitate transfer for graduates of two-year programs in data processing or business computing.

Systems software science option
The goal of this program is to provide students with a background in the principles of systems software as well as experience in the design, implementation, and maintenance of systems programs. Systems programs are those which enhance the performance, utility, or flexibility of a computer system. In many respects, a systems programmer is a toolmaker whose tools are used by other programmers. These tools include operating systems, language translators and interpreters, text editors, and database systems.

Students in this option must learn to understand, design, and implement the lowest level programs in a computer system. For this reason, a deep understanding of hardware concepts and assembly language programming is essential. In addition, a strong background in operating systems principles, language processors, and data communications is necessary.

Graduates are prepared for employment as systems programmers or systems software specialists. Any relevant curriculum at RIT may be chosen for professional electives.

Yr.	Systems Software Science option, B. Tech. degree	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	ICSS-202 Introduction to Computer Science	4		
	ICSP-241 Programming I-Algorithmic Structures	4		
	ICSP-242 Programming II-Data Structures		4	
	ICSP-243 Programming III-Design and Implementation			4
	SMAM-214, 215 Introductory Calculus [3]	3	3	
	SMAM-309 Statistics [3]			4
	GLLC-220 English Composition	4		
	Liberal Arts		8	8
	Physical Education Electives	0	0	0
2	ICSP-305 Assembly Language Programming	4		
	ICSS-315 Digital Computer Organization		4	
	ICSP-306 Systems Programming Fundamentals			4
	ICSS-325 Data Organization and Management		4	
	Computer Science Electives [1]			4
	Professional Electives	4	4	8
	Liberal Arts	8	4	
	Physical Education Electives	0	0	0
3	ICIC-444 Technical Writing for Computer Scientists		2	
	ICSS-450 Programming Language Concepts		4	
	ICSS-420 Data Communication Systems		4	
4	ICSS-440 Operating Systems		4	
	ICSS-580 Language Processors		4	
5	Restricted Computer Science Electives [2]		12	
	Computer Science Electives [1]		28	
	Professional Electives		24	
	Liberal Arts		14	
	Cooperative Education (4 quarters)			

[1] *Computer Science courses may be taken as Computer Science Electives except as noted in the Course Description Catalog.*

[2] *Restricted Computer Science Electives for the Systems Software Science option:*
Students must take one course from Group A, one course from Group B, and one course from Group C.
Group A: Advanced Software Techniques
ICSS-540 Operating Systems Laboratory
ICSS-560 Compiler Construction Laboratory
ICSS-585 Systems Programming Laboratory
Group 6. Advanced Digital Computer Principles
ICSS-520 Computer Architecture I
ICSS-521 Introduction to Microprocessor Systems
Group C: Application Areas
ICSS-485 Database Concepts
ICSS-515 Analysis of Algorithms
ICSS-530 Fundamentals of Discrete Simulation
ICSS-570 Introduction to Computer Graphics

[3] *Mathematically inclined students may satisfy the mathematics requirement by substituting SMAM-251. 252, 253, 351 and 352 tor the listed SMAM courses. The additional courses will be counted as professional electives.*

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.

Upper-division programs
The School of Engineering Technology offers the following upper-division (junior-senior) programs leading to the bachelor of technology (B. Tech) degree:

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

The School of Engineering Technology upper-division programs are 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 heavily involved in professional studies, coupled with 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.

Five-year program
The School of Engineering Technology offers a five-year cooperative education program leading to the bachelor of technology degree in computer technology. Students have the option of exiting the

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

Accreditation
The programs of study leading to the bachelor of technology degree in civil engineering technology, electrical engineering technology, mechanical engineering technology, manufacturing engineering technology, and energy engineering technology are all accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET). The School of Engineering Technology is a member institution of the American Society for Engineering Education.

Careers
The B. Tech 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 board engineering requirements of business, industry and government. At the present time, the New York State Board for Engineering and Land Surveying requires the B. Tech 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 work 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 familarization 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 upper-division programs the entering (junior) class is divided into two sections with one half of the class beginning their RIT program on a co-op job, and the other half beginning with their academic work. Detailed schedules are provided in the description of the individual programs on the following pages.

Admission requirements
Admission to the upper-division programs in the School of Engineering Technology is open to persons holding an associate degree in appropriate engineering technology fields, or an acceptable equivalent. Please refer to individual department requirements for a more complete definition of an acceptable degree.

Admission may be offered to students with other associate degrees or program backgrounds. In such cases, students should contact the School of Engineering Technology for an individual evaluation of the appropriateness of their previous academic experience.

Admission to the five-year computer technology program 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 admission is open to graduates of appropriate two-year college programs.

Program requirements
In addition to the required technical courses of each program, a minimum of 38 quarter credit hours of liberal arts and 35 quarter credit hours of mathematics/sciences is required for the B. Tech 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 degree—The bachelor of technology 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 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 an 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. Persons wishing further information on part-time studies in the evening should contact the particular department offering the program.

Civil Engineering Technology Department

Kevin M. Foley, Chairman

Civil Engineering Technology, upper division baccalaureate program
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, work drawings, specifications, and construction.

Entering students have a choice of following either a curriculum oriented

towards environmental controls or towards the construction industry. In addition, the program is sufficiently broad in scope and allows for elective courses so that graduates of the program should find wide-ranging employment opportunities. The program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET) and is operated on the cooperative education plan.

Admission requirements
All students enter this program at the third-year level or higher having already received an appropriate associate degree in civil engineering technology or an acceptable equivalent. An appropriate associate degree should include:

Technical Math (2 college-level courses with introduction to calculus)
Drafting
Technical Physics
Soil Mechanics
Surveying (2 semesters including Route Surveying)
Statics
Strength of Materials

Students lacking these courses may be required to take the missing courses prior to entry into the program or concurrently within a reasonable time.

Normally, an associate in science degree is acceptable from an engineering transfer program with students taking those courses they lack concurrently in the program.

Civil Engineering Technology cooperative education plan

Year	Fall	Winter	Spring	Summer
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.
1 2	Completion of an appropriate Associate degree or equivalent			
3	ITEC-099 Introduction to CET	1		
	#ITEC-420 Hydraulics	3		
	#ITEC-421 Hydraulics Lab	1		
	ITEC-428 Technical Communications	4		
	**SMAT-420 Calculus for Technologists 1	(4)		
	SMAT-421 Calculus for Technologists II	4		
	ICSP-220 FORTRAN Programming for Engineers	4		
	‡Physical Education Elective	0		
	ITEC-404 Applied Mechanics of Materials		4	
	SCHG-271 Chemistry of Water 1		3	
	SCHG-275 Chemistry of Water Lab		1	
	**SMAT-421 Calculus for Technologists II		(4)	
	SMAT-422 Solutions of Engineering Problems		4	
	ITEC-513 Computer Techniques in Cfc l		2	
	*Liberal Arts		4	
	‡Physical Education Elective		0	
4	ITEC-490 Structural Analysis	4		
	SCHG-272 Chemistry of Water II	2		
	SCHG-276 Chemistry of Water Lab	1		
	ITEC-432 Water and Wastewater Transport Systems	2		
	**SMAT-422 Solutions of Engineering Problems	(4)		
	Technical Elective	4		
	*'Liberal Arts	4		
	ITEC-446 Professional Principles and Practices			1
	ITEC-495 Structural Design			4
	ITEC-438 Principles of Treatment of Water and Sewage			4
	ITEC-527 Soil Mechanics and Foundations			3
	ITEC-528 Soil Mechanics Lab			1
	*Liberal Arts (Concentration)			4
5	ITEC-530 Transportation Engineering		4	
	ITEC-422 Elements of Building Construction		4	
	Technical Elective		4	
	Technical Elective		2	
	*Liberal Arts (Concentration)		4	
	ITEE-414 Basic Electrical Principles			4
	Technical Elective			2-4
	Free Elective			4
	*Liberal Arts (Concentration)			4
	*Liberal Arts (Senior Seminar)			2

"Entering students will take SMAT-420 or 421 depending on an evaluation of their mathematics background. Graduates will have to meet a minimum or 35 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.
#Students who successfully complete proficiency exam will take a technical elective in lieu of ITEC-420-421.
‡See Pg. 24 tor Policy on Physical Education.
"See Pg. 102 tor Liberal Arts requirements.

Cooperative education plan
Work experience gained while completing alternating work and study quarters is especially valuable. A typical co-op job at a consulting firm might include assisting engineers in design drafting, feasibility or preliminary report writing or inspecting, surveying, or investigating in the field. Other co-op students work in water treatment plants, checking control panels; operating valves, pumps, and other equipment; performing laboratory tests; or doing maintenance work.

The scope of work accomplished varies with the interests of each student and increases in complexity with each succeeding job. Construction companies, larger corporations' construction and engineering departments, testing agencies, and all branches of government employ our students. Some students work their co-op quarters with the same employer while others choose various work experiences. All are expected to use their education on the job and to bring back innovative, new and unusually successful technologies and ideas 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 governmental agencies. They are scattered from coast to coast and from New York to Texas. Their titles range from project or design engineer 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 514 Land Planning 4 cr.
ITEC 510 Design of Water Treatment Facilities 2 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.

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

Structures
ITEC 470 Timber Design 4 cr.
ITEC 518 Masonry Design 2cr.
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.
ITEC 500 Labor Relations 2 cr.
ITEC 556-557 Wastewater Treatment Plant Operation and Control I&II 1-4 cr.
SMAM 309 Elementary Statistics 4 cr.
ITEC 526 Industrial Wastewater 4 cr.
ITEC 580 Senior Civil Seminar 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.

Electrical Engineering Technology Department

John A. Stratton, Chairman

Electrical Engineering Technology, upper division 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 (ABET).

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

The term technologist is used to define the graduate of this program, one whose professional training is in the application of existing technology and devices to the solution of routine engineering design problems.

The bachelor of technology program in electrical engineering technology offered at Rochester Institute of Technology is an upper-division program. The upper-division feature of the program provides a viable transfer option to those students who have completed their associate degree and desire to continue their education in technology.

The first two quarters of course work are designed to provide uniform mastery in the fields of mathematics^ and circuit theory. The remaining four quarters of course work consist of professional courses with elective options in the fields of electrical power, communications, and digital computer design.

Elective courses are available for the student to pursue his or her chosen option and to provide course work that complements his or her professional objectives. Professional electives are normally assumed to be those shown as technical electives. However, the Institute provides a wide variety of course offerings and students are urged to make full use of these offerings in developing their professional programs. Academic advisors are provided to assist the student in this selection process.

For students who wish to concentrate their electives in a particular area, a sequence of courses is shown which provides a strong program in this area.

The curriculum also includes one year of cooperative work experience, and thus, provides important training in the solution of real technical problems.

Entering students are divided into two groups, A and B, and are assigned to work or school according to the schedules shown. Note that half of the entering students will begin their program of studies at RIT by working on their co-op job.

Admission requirements
All students enter the program at the third year or junior level as transfers from existing two-year associate degree electrical technology programs. Students from associate degree programs that are closely related to electrical technology and that have appropriate circuits and electronic course levels are also accepted but may be required to take remedial courses prior to matriculating into the program.

Evening Program
This program may be taken on a part-time basis during the evening hours for those who are employed full-time and who desire to receive an ABET-accredited baccalaureate degree. Further details can be obtained by contacting the department.

Elective Sequences:

Computer Design:
ITEE 538 Digital Computer Design I
ITEE 539 Digital Computer Design II
ITEE 543 Minicomputers, Controllers and Peripherals.
ITEE 528 Introduction to Minicomputers

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

Electronic Communications:
ITEE 534 Communication Systems I
ITEE 535 Communication Systems II
ITEE 524 Microwave Systems
ITEE 555 Transmission Lines and Antennas
ITEE 547 Digital Processing of Signals

Electrical Engineering Technology cooperative education plan

Year		Fall	Winter	Spring	Summer
3 and 4	A	RIT	Work	RIT	Work
	B	Work	RIT	Work	RIT
5	A	RIT	Work	RIT	–
	B	Work	RIT	RIT	–

Yr.	Electrical Engineering Technology, B. Tech degree**	Qtr. Credit Hours		
		FALL-WTR.		SPG. SMR.
1 2	Completion of an appropriate Associate degree or equivalent			
3	ITEE-401 Circuit Theory I	4		
	ITEE-424 Logic and Digital Devices	4		
	ITEE-437 Computer Programming Techniques (Pascal)	4		
	SMAT-421 Calculus for Technologists II	4		
	ITEE-402 Circuit Theory II			3
	ITEE-425 Power Concepts			3
	ITEE-428 Linear Amplifier Design			4
	SMAT-422 Solution of Engineering Problems			4
	*Liberal Arts (Core)			4
	‡Physical Education Elective	0		0
4	ITEE-404 Control Systems I	4		
	ITEE-530 Application of Discrete and Integrated Circuit Elements	4		
	ITEE-542 Microprocessors	4		
	*Liberal Arts (Concentration)	4		
	‡Physical Education Elective	0		
	ITEE-520 Electrostatic and Magnetic Fields			4
	ITEE-532 Power Amplifier Design			4
	*Liberal Arts (Concentration)			4
	Technical Elective			4
5	ITEM-408 Introduction to Strength of Materials	4		
	*Liberal Arts (Concentration)	4		
	ITEF-436 Engineering Economics	4		
	Technical Elective	4		
	*Liberal Arts (Seminar)	2		
	Technical Elective			4
	ITEM-411 Engineering Materials			4
	Free Elective			4
	Mathematics or Science Elective			4

"The program shown is typical tor those entering with an appropriate associate degree. Graduates will have to meet a minimum ot 35 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 Pg. 24 for Policy on Physical Education.
**See Pg. 102 for Liberal Arts requirements.*

Microelectronics:
ITEE 560 Microelectronics I
ITEE 561 Microelectronics II
ITEE 562 Construction and Failure Analysis

Other Electives:
ITEE 554 Electronic Optic Devices
ITEE 546 Industrial Electronics
ITEE 536 Control Systems II
ITEE 580 Senior Project
ITEF 424 Statistical Quality Control I

Computer Technology, AAS and baccalaureate program

The demand for graduates who are able to use both knowledge of computer programming and computer electronic hardware is very great. This is true for both technicians with an AAS degree and for technologists with the bachelor of technology degree.

Based on a foundation in physics and applied mathematics, the computer 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 a slightly modified 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 B. Tech 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 and show a typical plan for those transferring with an AAS degree.

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 350 Professional Language Concepts
   ICSS 580 Language Processors
B. ICSP 306 Advanced Assembly Language
   ICSS 540 Operating Systems Lab.
C. ICSS 541 Introduction to Computer Networks
   ICSS 545 Computer Architecture II
D. ITEE 528 Introduction to Minicomputers
   ITEE 543 Minicomputers, Controllers and Peripherals
E. ITEE 520 Electrostatic and Magnetic Fields
   ITEE 534 Communications Systems I
   ITEE 535 Communications Systems II

Computer Technology cooperative education plan (five-year program)

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

Computer Technology cooperative education schedule (sample transfer program)

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

Yr.	Computer Technology B. Tech 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		
	ICSP-243 Programming III			4	
	ITEE-201 DC Circuits	4			
	ITEE-202 AC Circuits		4		
	ITEE-203 Electronic Devices				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 Labs	1	1	1	
	ICSP-305 Assembly Language Programming	4			
	ITEE-301 Digital Fundamentals	4			
	SMAT-422 Solution of Engineering Problems (B Tech) or Liberal Arts (AAS)	4			
	ICSS-325 Data Organization and Management		4		
	ITEE-302 Linear Integrated Circuits		4		
	Liberal Arts (Core)		4		
	ITEE-303 Microprocessors			4	
	ITEE-305 Drafting and Fabrication			4	
	SMAM-205 Mathematics for Computing I			4	
	Physical Education	0	0	0	
3	SMAM-206 Mathematics for Computing II	4			
	Liberal Arts (Core)	4			
	ITEE-538 Digital Computer Design I	4			
	ITEE-409 Technical Reports	4			
	SMAM-207 Mathematics for Computing III			4	
	ITEE-403 Advanced Circuits			4	
	ITEE-539 Digital Computer Design II			4	
	ICSS-440 Operating Systems			4	
4	ITEE-429 Advanced Electronics		4		
	ITEE-405 Power Controls		4		
	ICSS-420 Data Communications		4		
	Liberal Arts (Core) (Concentration)		4		4
	ITEE-527 Semiconductor Devices				4
	ICSS-500 Computer Architecture I				4
	ITEE-472 Instrumentation				4
5	ITEE-471 Topics in Computer Technology		4		
	Liberal Arts (Concentration)		4		4
	Liberal Arts (Senior Seminar)			2	
	Professional Electives		8	8	

F. ITEE 560 Microelectronics I
ITEE 561 Microelectronics II
ITEE 562 Construction and Failure Analysis

G. ITEE 550 Power Systems I
ITEE 551 Protective Relaying
ITEE 552 Power Systems II

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

Mechanical Engineering Technology Department

Charles DeRoller, Chairman

Mechanical Engineering Technology, upper division baccalaureate program

Background
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 (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 expand their skills in the fundamentals of mechanics, mathematics and materials technology.

In senior quarters, the main concentration is in machine design, and a range of electives are available in this area.

Individuals will be allowed to select electives from energy specialization or the manufacturing technology program, provided they satisfy the prerequisites for the courses elected.

A substantial measure of laboratory work is required, including the preparation of quality reports.

Admission requirements
All 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 programs will have provided the entrant with background in the following:

Mathematics through Introductory Calculus
Physics
Mechanical Drafting
Manufacturing Processes
Statics and Elementary Strength of Materials
Machine Design

Technical electives-Mechanical Engineering Technology
ITEF-437 Value Analysis
ITEM-406 Dynamics of Machinery
ITEM-442 Heat Transfer
ITEM-451 Vibration and Noise
ITEM 508 Special Topics in Machine Design
ITEM-510 Computer Aided Engineering
ITEM-530 Instrumentation
ITEM-540 Thermal Technology
ITEM-599 Independent Study

Evening Program
This program may be taken on a part-time basis during the evening hours for those students who are employed full-time and who desire to receive an ABET-accredited baccalaureate degree. Further details can be obtained by contacting the department.

Mechanical Engineering Technology cooperative education plan

Year		Fall	Winter	Spring	Summer
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	_

Yr.	Mechanical Engineering Technology, B-. Tech degree	Qtr. Credit Hours			
		FALL	WTR.	SPG.	SMR.
1.2	Completion of appropriate Associate degree or equivalent				
3	**SMAT-420 Calculus for Technologists I..	(4)			
	**SMAT-421 Calculus for Technologists II	4			
	ICSP-205 Computer Techniques	3			
	ITEM-404 Applied Mechanics of Materials	4			
	ITEM-407 Mechanical Engineering Technology Lab I	3			
	ITEM-414 Materials Technology I	3			
	‡Physical Education	0			
	**SMAT-421 Calculus for Technologists II		**(4)**		**(4)**
	**SMAT-422 Solution of Engineering Problems		4		4
	ITEM-405 Applied Dynamics		4		4
	ITEM-409 Mechanical Engineering Technology Lab II		2		2
	ITEM-415 Materials Technology II		3		3
	*Liberal Arts .		4		4
	‡Physical Education		0		0
4	**SMAT-422 Solution of Engineering Problems	**(4)**	**(4)**		
	ITEM-440 Applied Thermodynamics	4	4		
	ITEE-411 Electrical Principles for Design I	4	4		
	Technical Elective	4	4		
	*Liberal Arts .	4	4		
	‡Physical Education	0	0		
	ITEM-460 Applied Fluid Mechanics			4	4
	ITEM-506 Machine Design			4	4
	ITEE-412 Electrical Principles for Design II			4	4
	*Liberal Arts (Concentration)			4 •	4
5	ITEM-465 Thermofluid Laboratory	3	3		
	ITEM-521 Logic Control Systems	4	4		
	Technical Elective	4	4		
	*Liberal Arts (Concentration)	4	4		
	Technical Elective	. *j* .		4	
	Technical Elective			4	
	Free Elective			4	
	*Liberal Arts (Concentration)			4	
	Liberal Arts (Seminar)			2	

*'**Entering students will take SMAT-420 or -421 depending on an evaluation ol their mathematics background. Graduates will have to meet a minimum of 35 quarter credits ol mathematics and science (including credits transferred), and include mathematics SMAT-422 or equivalent. Rearrangement ol the above schedule will be allowed to meet the math/science requirements.*
‡See Pg. 24 lor Policy on Physical Education.
**See Pg. 102 for Liberal Arts requirements.*

Energy Engineering Technology, upper division baccalaureate program

Background
Recent history has brought energy to the forefront of the news on a daily basis. Energy is the life blood of the national economy and has wide-ranging international, political and economic impact. Industrial, commercial and governmental groups as well as individuals are now focusing a great deal of attention on energy conservation and energy management techniques. The increasing importance of this vital field has

created a strong demand for persons who are well grounded in energy technology. The program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET) and is operated on the cooperative education plan.

Objectives of the program

The Energy Engineering Technology Program was developed to provide a direct route for persons having associate degrees in energy related technologies to gain professional positions in the energy field. It is designed to prepare individuals to work in the areas of commercial and industrial energy system design, energy conservation, and energy management. These positions are with consulting engineering firms, industrial corporations, building owners, utilities, mechanical contractors and companies manufacturing and marketing HVAC apparatus.

The curriculum

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

Admission requirements

The Energy Engineering Technology 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
ITEE-425 Power Concepts
ITEE-550 Power Systems I
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-547 Special Topics
ITEM-530 Instrumentation
ITEM-560 Pipe and Duct Design
ITEM-570 HVAC Load Analysis
ITEM-575 Computer-Aided HVAC Design
ITEM-580 Power Plant Design

Energy Engineering Technology co-operative education plan

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

Yr.	Energy Technology, B. Tech degree	Qtr. Credit Hours			
		FALL	WTR.	SPG.	SMR.
1 2	Completion of appropriate Associate's degree or equivalent				
3	**SMAT-420 Calculus for Technologists I	(4)			
	**SMAT-421 Calculus for Technologists II	4			
	ITEM-408 Introduction to Strength of Materials	4			
	ICSP-205 Computer Techniques	3			
	ITEF-436 Engineering Economics	4			
	ITEM-428 Report Writing	2			
	**SMAT-421 Calculus for Technologists II		(4)		
	**SMAT-422 Solution of Engineering Problems		4		
	ITEM-440 Applied Thermodynamics		4		
	ITEM-542 HVAC System Engineering		4		
	*Liberal Arts		4		
	‡Physical Education		0		
4	**SMAT-422 Solution of Engineering Problems	(4)			
	ITEE-411 Electrical Principles for Design I	4			
	ITEM-460 Applied Fluid Mechanics	4			
	ITEM-442 Heat Transfer	4			
	*Liberal Arts	4			
	‡Physical Education	0			
	ITEM-465 Thermofluid Laboratory			3	
	ITEM-540 Thermal Technology			4	
	ITEE-412 Electrical Principles for Design II			4	
	*Liberal Arts (Concentration)			4	
	‡Physical Education			0	
5	ITEM-522 HVAC Control Systems		4		
	Technical Elective		4		
	Technical Elective		4		
	*Liberal Arts (Concentration)		4		
	Technical Elective			4	
	Technical Elective			4	
	Free Elective			4	
	*Liberal Arts (Concentration)			'4	
	Liberal Arts (Seminar)			2	

*'**Entering students will take SMAT-420 or 421 depending on an evaluation of their mathematics background. Graduates will have to meet a minimum of 35 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 Pg. 24 tor Policy on Physical Education.
**See Pg. 102 tor Liberal Arts requirements.*

Manufacturing Engineering Technology, upper division baccaluareate program

Background

Leaders in the manufacturing engineering profession estimate that the present shortage of qualified manufacturing technologists is between 50,000 and 100,000 people—and this need is increasing. The two principle factors generating this demand are industrial productivity and technological innovations. The rate of increase of productivity in American industry is lagging that of 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 nation-wide 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: numerical control, machine tools, micro-processor controls, robotics, computer-aided manufacturing, and manufacturing systems.

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

Objectives of the program

The primary objective of the manufacturing engineering technology program is to prepare individuals for professional employment as manufacturing technologists. 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 are provided.

Curriculum

The manufacturing engineering technology curriculum has been designed with the aid and consultation of professionals in the field. It includes those courses which these people feel are fundamental for professional success in industry. The program includes courses in Advanced Manufacturing Processes, Computer Numerical Control, Computer-Aided Manufacturing, Quality Control, Manufacturing Laboratory and Management Studies. Students are encouraged to select technical electives to enhance their particular areas of interest.

Manufacturing Engineering Technology cooperative education plan

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

Yr.	Manufacturing Engineering Technology, B. Tech degree	Qtr. Credit Hours			
		FALL	WTR.	SPG.	SMR.
1,2	Completion of appropriate Associate degree or equivalent				
3	**SMAT-420 Calculus for Technologists I	(4)			
	**SMAT-421 Calculus for Technologists II	4			
	ICSP-205 Computer Techniques	3			
	ITEF-403 Machine Elements	4			
	ITEF-436 Engineering Economics	4			
	‡Physical Education	0			
	**SMAT-421 Calculus for Technologists II		(4)		
	**SMAT-422 Solution of Engineering Problems		4		
	ITEF-471 Computer Numerical Control		4		
	ITEF-434 Operations Management		4		
	*Liberal Arts .		4		
4	Technical Elective .	4			
	**SMAT-422 Solution of Engineerng Problems	(4)			
	ITEF-502 Advanced Manufacturing Processes	4			
	ITEE-411 Electrical Principles I	4			
	*Liberal Arts .	4			
	‡Physical Education	0			
	ITEE-412 Electrical Principles II			4	
	ITEF-424 Statistical Quality Control I			4	
	ITEF-475 Computer-Aided Manufacturing			4	
	*Liberal Arts (Concentration)			4	
5	ITEF-437 Value Analysis		3		
	ITEF-472 Tool Engineering		4		
	Technical Elective .		4		
	*Liberal Arts .		4		
	ITEF-510 Process Design I			4	
	Technical Elective .			4	
	Free Elective			3-5	
	*Liberal Arts (Concentration)			4	
	Liberal Arts (Seminar)			2	

*"*Entering students will take SMAT-420 and 421 depending on an evaluation of their mathematics background. Graduates will have to meat a minimum'ot 35 quarter credits ot mathematics and science (Including credits transferred), and Include mathematics SMAT-422 or equivalent. Rearrangement ot the above schedule will be allowed to meet the math/science requirements.*

‡See Pg. 24 for Policy on Physical Education.

**See Pg. 102 for Liberal Arts requirements.*

Admission requirements

The most appropriate qualification for students entering the third-year level of the program is the associate degree in mechanical or manufacturing technology. It is expected that these programs will have provided coverage in the following topics:

Mathematics through pre-calculus
Physics
Strength of Materials
Materials Technology
Manufacturing Processes
Numerical Control
Metrology

Students from other backgrounds will be considered, but they may be required to take additional courses as prerequisites to the main program of study.

Technical electives-Manufacturing Engineering Technology

ITEF-460 Computer-Aided Design
ITEF-485 Robots in Manufacturing
ITEF-473 Compact II
ITEF-491 Production Control
ITEF-511 Process Design II
ITEF-425 Statistical Quality Control II
ITEF-526 Quality Systems
ITEF-481 Work Simplification and Measurement
ITEF-599 Independent Study

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

Evening Program

This program may be taken on a part-time basis during the evening hours for those students who are employed

Yr.	Food Management	Quarter Credit Hours			
		FALL	WTR.	SPG.	SMR.
1	ISMF-210 Introduction to Food, Hotel & Tourism Management	4			
	ISMF-220 Hospitality Career Seminar	1			
	ISMF-215 Principles of Food Production	5			
	GLLC-220 English Composition .	4			
	SMAM-225 Algebra for Mgmt. Sciences	4			
	GSSE-210 Intro to Economics ...		4		
	GLLL-332 Literature		4		
	SMAM-226 Calculus for Mgmt. Sciences		4		
	ISMF-314 Fund, of Food Sanitation		2		
	BBUA-301 Financial Accounting.			4	
	ISMD-213 Nutrition Sciences			4	
	SBIG-210 Microbiology OR			4	
	SCHG 289 Cont. Science Chem..				
	*Liberal Arts			4	
	‡Physical Education	0	0	0	
	ISMF-499 Cooperative Education				0
2†	ISMF-321 Menu Planning & Merchandising	4			
	BBUB-201 Management Concepts	4			
	BBUQ-351 Statistics I	4			
	ICSS-200 Survey of Computer Science	.4			
	ISMF-425 Purchasing & Inventory Control		3		
	ISMF-435 Purchasing Lab		2		
	BBUA-302 Managerial Accounting		4		
	BBUQ-352 Statistics II		4		
	Liberal Arts		4		
	ISMF-331 Food Systems Management			5	
	*Liberal Arts			12	
	‡Physical Education	0	0	0	
	ISMF-499 Cooperative Education				0
3	BBUM-463 Principles of Marketing	4			
	BBUA-431 Cost Accounting OR .	4			
	BBUF-441 Corporate Finance ...				
	ISMF-426 Personnel & Training ..	4			
	Liberal Arts	4			
	ISMF-311 Design & Equipment Engr		4		
	ISMF-340 Beverage Operations..		3		
	ISMF-341 Beverage Operations Lab		2		
	ISMF-416 Product Development .		4		
	ISMF-424 Food/Labor/Cost Control		4		
	ISMF Elective			4	
	*Liberal Arts			12	
	ISMF-499 Cooperative Education				0
4	ISMF-430 Restaurant Management		5		
	ISMF-554 Senior Career Seminar		2		
	Electives		8		
	*Liberal Arts		4		
	ISMF-499 Cooperative Education			0	
	ISMF-511 Banquet & Catering ...				4
	Electives				8
	Liberal Arts (Senior Seminar) ...				2
	*Liberal Arts				4

†Upon successful completion of the second year, the associate in applied science is awarded.
‡See Pg. 24 tor Policy on Physical Education.
**See Pg. 102 for Liberal Arts requirements.*

full-time and who desire to receive an ABET-accredited baccalaureate degree. Further details can be obtained by contacting the department.

School of Food, Hotel and Tourism Management

RITs School of Food, Hotel and Tourism Management is preparing students for a wide variety of careers ranging from restaurant, hotel, resort, and travel management to dietetics. A career in the hospitality industries has become highly specialized in the business world. Efficient and sophisticated management is vital and requires a diversity of skills from many disciplines. The curriculum encompasses a broad liberal education, a firm foundation in business administration and extensive study in the student's chosen major.

The curriculum has been designed to be fully integrated so that the competencies acquired in earlier courses are used in more advanced courses. Students may take electives that will build a strong conception of the total industry. Students study accounting, marketing, finance, economics, computer science, business management, behavioral science, food preparation, hotel operations, nutritional and other related areas.

Our goal is to offer students a rigorous, challenging and interdisciplinary program of study in order to develop their talents to the fullest. Our committment to excellence gives students the opportunity to become all that they can become in a managerial environment of small classes which result in a dynamic learning interaction between faculty and students.

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 philosophy of the school requires that each student must combine 1600 hours practical experience with classroom theory to meet graduation requirements

Cooperative education is one of the many ways that the School of Food, Hotel and Tourism Management works to introduce students and hospitality firms to one another through hands-on learning and employment in the hospitality industry. Co-op is usually taken during the summer quarters after the freshman and sophomore years; co-ops may be taken during any academic quarter in the junior year. Seniors are expected to be in residence on campus in their final year. 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 more refined as they progress through the co-op program. Students select co-op employers that are located at some distance from Rochester or their hometown. They have decided that the experience of relocating, testing their independence in a major metropolitan area, is one of their

personal goals for the co-op work period. In general, co-op provides the student with the opportunity to apply much of the theory of classroom instruction to the actual work setting. The experience also enables the student to verify career goals, obtain earnings that will help finance his/her education and develop important personal and professional maturational skills, such as being able to handle independence and interpersonal relations as well as gain in the areas of self-confidence and judgement. Their diversified academic and practical backgrounds place RIT students in a more secure position to make career decisions that will be both personally and professionally rewarding.

Faculty
Our faculty is outstanding both from the standpoint of academic qualifications and hospitality industry experience. Their background and training allows for full coverage of all areas within the hospitality industry. Our School of Food, Hotel and Tourism Management offers one of the most comprehensive hospitality management programs among four-year colleges today.

Facilities
Our contemporary facilities provide students with the service-oriented atmosphere of a hotel/restaurant environment.

As you arrive on our concierge floor, our student concierge will acquaint you with Henry's, our full-service 80-seat restaurant, operated and managed by students, complete with the most sophisticated computer equipment.

Our 35-seat, fully-equipped beverage laboratory provides students with the traditional beverage operation as well as the latest in computerized beverage dispensing equipment.

Our concierge floor provides office room service, banquet and catering service and a travel laboratory equipped with an on-line American Airlines SABRE System, which allows travel and hotel management students to plan business and pleasure trips for our campus constituency. RIT is the only academic institution in the nation with the SABRE System in its academic program.

Our students can immediately relate to their careers by functioning and studying in a hospitality, business-oriented environment.

Yr.	Hotel and Resort Management	Quarter Credit Hours			
		FALL	WTR.	SPG.	SMR.
1	ISMF-210 Introduction to Food, Hotel & Tourism Management	4			
	ISMF-220 Career Seminar	1			
	ISMF-215 Principles of Food Production	5			
	GLLC-220 English Composition	4			
	SMAM-225 Algebra for Mgmt. Sciences	4			
	GSSE-210 Intro, to Economics		4		
	GLLL-332 Literature		4		
	SMAM-226 Calculus for Mgmt. Sciences		4		
	ISMF-314 Fundamentals of Food Sanitation		2		
	BBUA-301 Financial Accounting			4	
	ISMD-213 Nutrition Science			4	
	SBIG-210 Microbiology OR			4	
	SCHG-289 Cont. Science—Chemistry				
	*Liberal Arts			4	
	‡Physical Education	0	0	0	
	ISMF-499 Cooperative Education				0
2	BBUB-201 Management Concepts	4			
	BBUQ-351 Statistics I	4			
	ICSS-200 Survey of Computer Science	4			
	Liberal Arts	4			
	ISMH-400 Resort & Recreation Enterprises		4		
	ISMH-401, 402, 403, 404, 405, 406 Resort & Rec. Ent. Lab ..		1		
	BBUA 302 Managerial Accounting		4		
	BBUQ-352 Statistics II		4		
	Liberal Arts		4		
	ISMF-331 Food Systems Management			5	
	ISMF/ISMH/ISMT Elective			4	
	*Liberal Arts			8	
	‡Physical Education	0	0	0	
	ISMF-499 Cooperative Education	0	0	0	
3	BBUM-463 Principles of Marketing	4			
	ISMF-426 Personnel & Training	4			
	ISMH-423 Hotel Operations	5			
	ISMT-220 Travel Intermediaries	4			
	ISMH-420 Hotel & Travel Law		4		
	ISMF-340 Beverage Operations		3		
	ISMF-341 Beverage Operations Lab		2		
	ISMF-424 Food/Labor/Cost Control		4		
	Liberal Arts		4		
	ISMF/ISMH/ISMT Elective			4	
	*Liberal Arts			12	
	ISMF-499 Cooperative Education				0
4	BBUA-431 Cost Accounting OR	4			
	BBUF-441 Corporate Finance				
	ISMF-554 Senior Career Seminar	2			
	ISMH-412 Maint. Hotel/Resort	4			
	ISMF/ISMH/ISMT Elective	4			
	Liberal Arts	4			
	ISMF-499 Cooperative Education		0		
	ISMF-511 Banquet & Catering			4	
	ISMH-450 Hotel Marketing/Convention Sales			4	
	ISMF/ISMH/ISMT Elective			4	
	Liberal Arts (Senior Seminar)			2	
	*Liberal Arts			4	

‡See Pg. 24 for Policy on Physical Education.
*See Pg. 102 for Liberal Arts requirements.

Programs of study
Food and beverage management
The food service industry employs more people than any other in the nation. The industry covers the wide scope of public feeding, lodging and tourism. The program is designed to prepare persons for management training positions in restaurants and food service operations of differing types of institutions such as hotels, motor lodges, resorts, clubs, airlines, colleges and schools, business firms and governmental agencies.

Students in food management have membership available to them in the Restaurant Management Society (RMS). The Restaurant Management Society was the first student chapter in the nation to be chartered by a state restaurant association. The New York State Restaurant Association's goal is to make students aware of their career field of food management and to foster a strong working relationship with local chapters. The society exists to provide a forum for the interchange of ideas between students and businessmen and businesswomen.

Yr.	Travel Management	Quarter Credit Hours			
		FALL	WTR.	SPG.	SMR.
1	ISMF-210 Introduction to Food, Hotel & Tourism	4			
	ISMF-220 Career Seminar.	1			
	GLLC-220 English Composition	4			
	SMAM-225 Algebra for Mgmt. Sciences	4			
	GLLL-332 Literature	4			
	GSSE-210 Introduction to Economics		4		
	SMAM-226 Calculus for Mgmt. Sciences		4		
	ICSS-200 Survey of Computer Science		4		
	Liberal Arts		4		
	BBUB-201 Management Concepts			4	
	BBUA-301 Financial Accounting			4	
	ISMF/ISMH/ISMT Elective			4	
	*Liberal Arts			4	
	‡Physical Education	0	0	0	
	ISMF-499 Cooperative Education or Language Instr				0
2	BBUQ-351 Statistics I	4			
	ISMT-201 Travel Lab I	3			
	ISMH-400 Resort & Recreation Enterprises	4			
	ISMH-401, 402, 403,404, 405, 406 Resort & Recreation Ent. Lab ..	1			
	Liberal Arts	4			
	BBUA-302 Managerial Accounting		4		
	BBUQ-352 Statistics II		4		
	ISMT-202 Travel Lab II....		2		
	ISMT-210 Introduction to A.A. SABRE		4		
	Liberal Arts		4		
	ISMT-220 Travel Intermediaries			4	
	ISMF/ISMH/ISMT Electives			8	
	*Liberal Arts			4	
	‡Physical Education	0	0	0	
	ISMF-499 Cooperative Education or Language Instr				0
3	BBUM-463 Principles of Marketing	4			
	ISMF-426 Personnel & Training	4			
	ISMH-423 Hotel Operations	5			
	ISMT-320 Passenger Transportation Systems	4			
	ISMT-303 Travel Lab III ...		2		
	ISMH-420 Hotel & Travel Law		4		
	Liberal Arts		8		
	ISMF/ISMH/ISMT Elective		4		
	ISMT-370 Passenger Transportation Policy			4	
	*Liberal Arts			8	
	ISMF/ISMH/ISMT Elective			4	
	ISMF-499 Cooperative Education			0	
4	BBUA-431 Cost Accounting OR	4			
	BBUF-441 Corporate Finance				
	ISMF-554 Senior Career Seminar	2			
	ISMT-410 Tourism Consumption Analysis	4			
	ISMF/ISMH/ISMT Electives	8			
	ISMF-499 Cooperative Education		0		
	ISMH-450 Hotel Marketing Convention Sales			4	
	ISMT-550 Seminar in Travel Management			4	
	Liberal Arts (Senior Seminar).			2	
	*Liberal Arts			8	

‡See Pg. 24 lor Policy on Physical Education.
**See Pg. 102 lor Liberal Arts requirements.*

The society also seeks to provide recognition of students, to unify them through mutual interests and educational and social activities, and to foster lasting friendships.

Students with junior standing are encouraged to attend the National Restaurant Association Show in Chicago each year.

Hotel and resort management

The Hotel and Resort Management option is a professionally oriented curriculum for students seeking careers involving the development, management, and operation of hotel and recreation enterprises. The composite of discipline areas allows the student to understand the physical characteristics of hotel and recreation properties, as well as gaining the business expertise to manage and successfully market their hotel attributes.

The Hotel Sales Management Association (HSMA) offers its student members unique opportunities to learn about aspects of sales and marketing in the hospitality industry, knowledge which will be of use in a career in sales, as well as in management in the hotel/resort/ restaurant fields.

Students with senior standing are encouraged to attend the New York International Hotel and Restaurant Show or the New England Hotel and Restaurant Show.

Travel management

The dynamic growth of modern travel 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 myriad alternatives for transportation, accommodations and other travel services, and are increasingly beginning to rely upon the travel professional to help guide them wisely and honestly. Travel agencies and travel counselors have an important impact on tourist economics and on firms (food service, lodging, transportation) which supply services to tourists.

The Travel Management program 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 so as to provide the students with a balance of "hands-on" experience and business theory. This is necessary to further their understanding of why the travel industry operates as it does in its business environment. Thus, this career education orientation provides both the four-year student and the transfer student with a balance of theoretical classroom based instruction with the experiential opportunities that are furnished by cooperative education.

American Airline's SABRE reservation system

The students in the School of Food, Hotel and Tourism Management have begun using the advanced, automated reservation system that was designed by American Airlines to allow travel planners to serve the public faster and handle the complex details of their business more efficiently. The system, known as SABRE, enables travel planners to give their clients "immediate confirmation" for flights operated by 567 airlines worldwide. These flights serve some 6,000 individual cities and over 100,000 city pairs.

With SABRE, the students no longer work at conventional desks. Instead, they are now seated, airline fashion, at SABRE reservation sets that use video screens and typewriter-like keyboards and are linked directly to American's worldwide travel information, which also includes: accommodations at more than 9,500 hotels, domestic and international; 16 major car rental firms; and 12 different wholesale tour operators with tour information on all major vacation destinations (such as Hawaii, the Caribbean, Mexico, Canada, and major U.S. mainland sun and ski resorts).

SABRE 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, prepares 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 the like.

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

Opportunities

Our nation is now a service economy, which means that the majority of employment will be service oriented. The food service area ranks as the nation's fourth largest industry while hotels rank seventh. Combined, they enjoy a rank of third. The closely interrelated tourism industry is one of the fastest developing businesses in the United States. With the continued expansion of U.S. food companies and hotels into foreign markets, international tourism offers ever increasing opportunities for professionally trained individuals. More people are expected to travel for pleasure as well as business, and they will do so more frequently than in the past. To meet the demand for travel related activities, students will find

Yr.	General Dietetics[1]	Quarter Credit Hours			
		FALL	WTR.	SPG.	SMR.
1	ISMF-215 Principles of Food Production	5			
	**SCHG-201, 221 General Inorganic Chemistry (plus lab) ...	4			
	GLLC-220 English Composition	4			
	SMAM-225 Algebra for Mgmt. Sciences	4			
	BBUB-201 Management Concepts		4		
	GSSE-210 Introduction to Economics		4		
	**SCHG-202, 222 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	
2†	ISMF-321 Menu Planning & Merchandising	4			
	**SBIG-210, 220 Microbiology (plus lab)	4			
	**SCHG-204 Biochemistry II	4			
	BBUA-301 Financial Accounting			4	
	BBUQ-351 Statistics I		4		
	**SBIB-305, 306 Physiology & Anatomy (plus lab) OR		4	4	
	SBIG-211, 212 Human Biology II, III				
	ISMF-314 Sanitation and Safety			2	
	ISMF/ISMH/ISMT Elective			4	
	*Liberal Arts	4	8	4	
	ISMF-499 Cooperative Education				0
	‡Physical Education	0	0	0	
3	ISMF-416 Product Development	4			
	ISMF-425 Purchasing & Inventory	3			
	ISMF-435 Purchasing Lab	2			
	ISMF-331 Food Systems Management		5		
	ISMF-311 Design & Equipment Engineering		4		
	ISMF-426 Personnel & Training		4		
	*Liberal Arts	8	4		
	ISMF-499 Cooperative Education			0	0
4	ISMF-424 Food and Labor Cost Control	4			
	**ISMD-525 Advanced Nutrition/Diet Therapy I	5			
	Liberal Arts (Senior Seminar)		2		
	**ISMD-526 Advanced Nutrition/Diet Therapy II		4		
	**ISMD-554 Nutrition in Life Cycle		4		
	ICIC-519 Educational Methods		4		
	**ISMD-550 Community Nutrition			4	
	ISMF-430 Restaurant Management			5	
	*Liberal Arts	4	4	4	
	Elective	4		4	

[1]Changes in the dietetics program are subject to approval by the American Dietetics Association.
***These courses offered ONLY in the quarters listed on the schedule.*
†Upon successful completion of the second year, the associate in applied science degree is awarded.
‡See Pg. 24 tor Policy on Physical Education.
**See Pg. 102 for Liberal Arts requirements.*

Yr.	General Dietetics (Coordinated Undergraduate Program)**	Quarter Credit Hours			
		FALL	WTR.	SPG.	SMR.
3	**ISMD-402 Dietetic Environment**	4			
	ISMF-416 Product Development	4			
	ISMF-425 Purchasing	3			
	ISMF-435 Purchasing Lab	2			
	ISMF-331 Food Systems Management		5		
	ICIC-519 Educational Methods		4		
	ISMF-311 Design & Equipment Engr		4		
	***Liberal Arts**	4	4		
	ISMF-424 Food & Labor Cost Control			4	
	ISMF-426 Personnel and Training			4	
	ISMD-551 Food Systems Management II (Clinical Course).			8	
4	ISMD-560 Clinical Dietetics I	4			
	ISMD-561 Clinical Dietetics II	4			
	Liberal Arts (Senior Seminar)	2			
	ISMD-562 Clinical Dietetics III		4		
	ISMD-563 Clinical Dietetics IV		6		
	ISMD-554 Nutrition for Life Cycle		4		
	ISMD-550 Community Nutrition			4	
	ISMF-430 Restaurant Management			5	
	*Liberal Arts	8		8	

"Changes in the dietetics program are subject to approval by the American Dietetics Association.
'See Pg. 102 for Liberal Arts requirements.

management career opportunities in Tour Promotion, Corporate Travel Planning, Federal and State Tourist Boards, Convention Bureaus, Airline/Steamship/Motor Coach Companies, Retail and Wholesale Travel Bureaus, Hotel/Resorts and a variety of leisure business industries.

Two-year transfer program for food 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 and two quarters of cooperative employment experience.

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 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.

Dietetics and nutritional care
Today's public is becoming increasingly interested in nutritional dining away from home and special menu selections which offer a diet selection to persons with serious ailments. Physical fitness programs seek educated advice as to meal planning. Clients of hotels, restaurants and cruise ships are seeking nutritional and well-balanced meals. Nursing homes in New York State require registered dietitians to be on their staff for purposes of adequate diet planning.

The Dietetic programs at RIT prepare graduates for careers in food systems management, nutritional, counseling, clinical dietetics, and as nutritionists in community nutrition programs. These programs combine physical, biological, and social sciences with courses in food management, food science, nutrition and diet therapy. Courses in management, computer science, and accounting strengthen management skills while instructional techniques and community nutrition help develop skills required to give nutrition information to the public. The implementation of several computer systems in our School offers students the opportunity to utilize the latest state-of-the-art equipment in their own student-operated restaurant facility. The use of the computers enables the students to assess sales mix, monitor inventory and develop purchasing and menu data quickly to assist in their supervisory decisions.

Opportunities
As a dietitian, you will be involved with people of all ages, cultures and economic means. If you enjoy people and learn to understand them as individuals, then you can help solve their food needs. Dietitians are health professionals who apply the science and art of human nutrition.

Recent graduates in Dietetics are clinical dietitians in .hospitals and nursing homes, nutritionists in community nutrition programs, instructors of nutrition, managers of foodservice in health care facilities and commercial foodservices, salespersons for companies selling nutritional products. Many graduates also play a major consulting/ management role in hotels, resorts, and the recreation industries.

Programs
The School of Food, Hotel and Tourism Management offers two options in dietetics: the Traditional Program in general dietetics and the Coordinated Undergraduate Program (CUP) in general dietetics.

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 traditional program in general dietetics. The curriculum in general dietetics leading to a BS degree at RIT meets the education requirements of the American Dietetic Association. Four-year students must complete three quarters of approved cooperative work experience.

Due to the special professional requirements of the American Dietetic Association, the amount of transferable credit and estimated time to complete work for the BS degree in General Dietetics must be determined by evaluation of each individual's record.

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

In addition to completing an approved academic program, persons seeking certification as a Registered Dietitian (R.D.) need to have an approved clinical experience and pass the qualifying comprehensive examination of the American Dietetic Association.

Coordinated Undergraduate Program (CUP) in general dietetics. The Coordinated Dietetics program combines the undergraduate curriculum and planned clinical study to meet the academic and clinical requirements for membership in the American Dietetic Association (ADA).

This program is planned to integrate formal 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.

Cooperative work experience is not required of students in the coordinated program because clinical hours have been planned in the junior and senior years of the professional phase.

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

NOTE: CUP application forms from the school must be completed and submitted to the department by March 1.

vr.	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	
	IPKG-311 Packaging Materials I			3
	SMAM-204 Modern Algebra	4		
	SMAM-214, 215 Introduction to Calculus		3	3
	SCHG-208, 209 College Chemistry	4		4
	GLLC-501 Effective Speaking			4
	*Liberal Arts (Core)	4	8	4
	‡Physical Education	0	0	0
2	IPKG-310 Methods of Evaluation	2		
	IPKG-312 Packaging Materials II	3		
	IPKG-321, 322 Container Systems I, II		4	4
	ICSP-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	
	BBUB-420 Principles of Management	4		
	BBUM-463 Principles of Marketing		4	
	*Liberal Arts (Core)	4	4	4
	‡Physical 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	3
	SPSP-271, 272, 273 College Physics Lab	1	1	1
	SPSP-341 Foundations of Scientific Thinking	2		
	PPRT-200 Introduction to Printing	3		
	*Liberal Arts (Concentration)	4	4	4
	Free Electives			4
4	IPKG-562 Packaging Regulations		3	
	IPKG-585 Shock and Vibration	4		
	Professional (Packaging) electives		4	4
	Liberal Arts Electives and Senior Seminar	6	4	4
	Free Electives	6	4	8

‡See Pg. 24 lor Policy on Physical Education.
**Sea Pg. 102 lor Liberal Arts requirements.*

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 CUP 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 on the basis of 4.0 scale 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 professional 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 packaging development, sales, purchasing, structural design, production, research, and marketing.

Packaging is a $50 billion 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.

All of these educational disciplines are found in the department curricula at RIT. This interdisciplinary program synthesizes these existing and recognized strengths with additional offerings recommended by representatives of the industry.

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 Hours		
		FALL	WTR.	SPG.
1	IPKG-201 Principles of Packaging	4		
	IPKG-301 Engineering Design Graphics		3	
	IPKG-311 Packaging Materials 1.			3
	ICSS-200 Survey of Computer Science			4
	SMAM-201, 202, 203 Algebra, Trigonometry, and Analytic Geometry	3	3	3
	GSSE-301, 302 Principles of Economics I, II	4	4	
	*Liberal Arts (Core)	4	8	4
	‡Physical Education	0	0	0
2	IPKG-310 Methods of Evaluation	2		
	IPKG-312 Packaging Materials II	3		
	IPKG-321, 322 Container Systems I, II		4	4
	SCHG-201, 221 General Chemistry/Lab	4		
	SCHG-202, 222 Organic Chemistry/Lab		4	
	PPRT-200 Introduction to Printing	3		
	BBUA-301 Financial Accounting			4
	BBUB-420 Principles of Management		4	
	GLCC-501 Effective Speaking			4
	*Liberal Arts (Core)	4	4	4
	‡Physical 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 I			4
	BBUB-430 Organizational Behavior		4	
	SPSP-211, 271 College Physics/Lab	4		
	SPSP-341 Foundations of Scientific Thinking	2		
	*Liberal Arts (Concentration)	4	4	4
	Management Elective		4	
	Free Elective			4
4	IPKG-562 Packaging Regulations		3	
	IPKG-585 Shock and Vibration	3		
	BBUM-463 Principles of Marketing			4
	Professional (Packaging) Electives		4	4
	*Liberal Arts Electives and Senior Seminar	6	4	4
	Management Elective	4		
	Free Electives	3	4	4

‡588 Pg. 24 tor Policy on Physical Education.
**See Pg. 102 lor Liberal Arts requirements.*

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 College of Business 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.

College of Business

Walter F. McCanna, Dean

The College of Business offers programs in accounting, management and retailing through the School of Business Administration and the School of Retailing. Majors are offered in accounting, finance, management, personnel and human resources, marketing information systems, 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 and humanities 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 13 courses (nearly one third of the total program) in the humanities, social sciences and sciences. Within this component the student is expected to display writing proficiency and choose a humanities or social science concentration. The capstone course of the liberal arts program is a senior seminar in which a subject in the concentration 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 are offered by the departments and the Center for Retail Management as follows:

Accounting Major
Public Accounting Option
General Accounting Option

Finance Major
Financial Management Option
Security Analysis Option

Business Management Major
General Business Option
Small Business Option

Personnel and Human Resource Management Major

Marketing Major

Information Systems Major

Retail Management Major
Retail Merchandising Management Option RIT/FIT Joint Degree Option
Retail Operations Management Option

Photographic Marketing Management Major

By building on the liberal arts and science and the 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 final 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 cooperative organization and so that advanced coursework taken between cooperative work terms will become more meaningful. A major impact of the cooperative experience is that it makes the student a more attractive candidate for employment following graduation.

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 either an area related to their chosen field of interest or an area they may wish to investigate further. This work experience is part of the student's career exploration and provides not only practical experience which can be related to coursework, 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 expected to complete two successful cooperative work experiences. These "work blocks" take place following the completion of the sophomore year. One or more of the cooperative education experiences may be waived at the discretion of the director of cooperative education based upon prior work experience in the student's field of study. While RIT and the College of Business cannot guarantee anyone cooperative employment, RITs Center for Cooperative Education and Career Services 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 years, integrated transfer students into its baccalaureate degree programs. Typically, students who have earned an associate degree in a business transfer 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, however, it is the policy of the college to recognize as fully as possible the past academic accomplishments of each student.

A transfer student must (1) complete a minimum number of credit hours required for the specific transfer program with an earned minimum grade point average of 2.0 in the departmentally approved program, and (2) complete required quarters of approved cooperative education assignments.

Evening Studies
Evening programs are available for students who wish to pursue a baccalaureate degree in the areas of accounting, finance, management, personnel and human resource management, or marketing. These upper-division programs are designed for the traditional part-time student who is maintaining full-time employment. Evening students who are entering at less than third-year status would begin their studies for an associate degree through the College of Continuing Education. Upon successful completion of an associate degree, students may apply to the College of Business for admission.

Graduation requirements
The minimum academic requirements in the College of Business for the bachelor of science degree are: 1) earned minimum grade point average of 2.0 in the departmental ly approved program, and 2) 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 computer terminals on line with RITs new computer system, extensive software support and up-to-date collection of business texts, periodicals, and reference services in the Wallace Memorial Library.

Professional affiliation
The public accounting curriculum of the School of Business Administration is registered with the New York State Education Department, and graduates meet the educational requirements for candidacy for the Certified Public Accountant examination.

Memberships in professional organizations contribute to the quality of the programs in the College of Business. The College of Business maintains membership in the American Assembly of Collegiate Schools of Business and the Middle Atlantic Association of Colleges of Business Administration. The Center for Retail Management is a member of the American Collegiate Retailing Association, which promotes the profession of retail management and maintains high standards of education for the retail profession.

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

The programs are professional in nature and prepare 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 RITs admission requirements, procedures and services is Included In detail on pages 14-15 of this Bulletin.

The College of Business offers several programs of study. The programs are referred to as majors and often have 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—Students majoring in accounting may choose the public accounting option or the general accounting option. Graduates of the public accounting option meet requirements for the C.P.A. examination. Students interested in the certification in management accounting (CMA) are encouraged to follow the general accounting option. The accounting major is designed to provide career opportunities in public accounting as well as in accounting departments in corporate organizations.

Finance—Students majoring in finance may choose the financial management or security analysis option. 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 the general business management or small business management option. Both areas have been developed to prepare students for positions in the field of management, consistent with their personal characteristics and career goals.

Personnel and Human Resource Management—This highly specialized program provides the opportunity for students to concentrate in the field of personnel, developing skills necessary for a professional career.

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 exist for students majoring in marketing, the program is reasonably flexible.

Information Systems—This is the newest program in the College of Business. It was developed to maximize career options for students who want to pursue an education in the application of computer science and technology to business and government. The program is centered in the College of Business as a response to industry's demand for individuals with backgrounds in both business and computer applications. RIT provides the analytical, technical and management education needed for a unique career in information systems.

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 will have the option of specializing in retail merchandising management, and retail operations management with further concentration in accounting, finance, marketing, personnel management and information systems. 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 multifaceted 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 Standards for Upper Division Students

Program	Two-Year College Program	Desirable Minimum GPA
Accounting	An earned associate degree in accounting or the equivalent	.2.45
Finance	An earned associate degree in accounting, business administration, or the equivalent	2.45
Information Systems	An earned associate degree in information systems, data processing, business administration, or the equivalent	2.45
Management	An earned associate degree in business administration, marketing, or the equivalent	2.45
Marketing	An earned associate degree in business administration, marketing, or the equivalent	2.45
Retail Management	An earned associate degree in business administration, marketing or retailing, retail merchandising, or the equivalent	2.45
Photo Marketing Management	An earned associate degree in business administration, marketing, or the equivalent	2.45

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 analytical, economic and quantitative skills specific to functional competencies in accounting, finance, marketing and production management, and the behavioral, social and organizational knowledge necessary for successful management performance and advanced study.

Business Core Courses

Career Seminar I & II
Algebra for Management Science
Calculus
Survey of Computer Science
Economics I (Macro)
Economics II (Micro)
Financial Accounting
Managerial Accounting
Legal Environment
Organizational Behavior
Management Science
Applied Statistics I
Applied Statistics II
Corporate Finance
Decision Support Systems
Principles of Marketing
Principles of Management
Operations Management
Business Environment
Integrated Business Analysis

Department of Accounting

Jose A. Rullan, Acting Chairman

The accounting major provides fundamental theory and practice of accounting in the accounting core courses which are required for all accounting majors. Beyond this core, students must 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 coursework satisfies the state's CPA examination entrance requirements. Candidates must have earned at least a C grade in each accounting course to be admitted to the CPA exam.

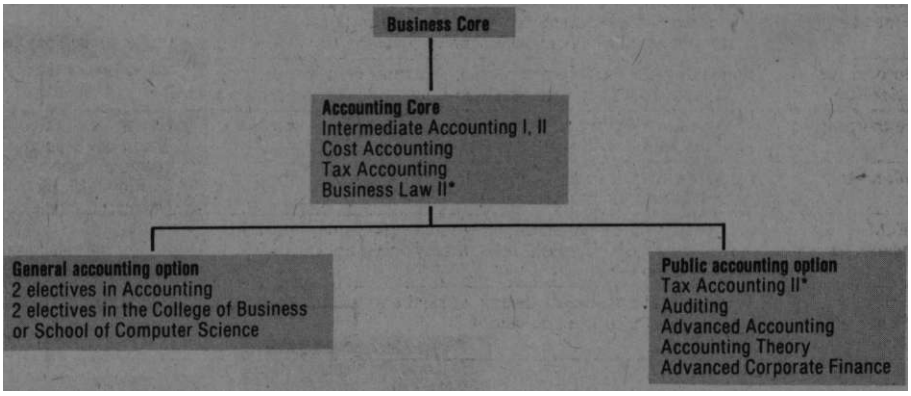
The general accounting option allows more flexibility in choice of courses. This flexibility has been designed to permit students to tailor their programs to meet diversity of industrial, commercial and municipal opportunities for accounting graduates. Of particular interest to both students and employers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

Yr. Accounting—Typical Schedule Qtr. Credit Hours

Yr.		FALL	WTR.	SPG.
1	0102-210 Career Seminar I	1		
	0106-351 Applied Statistics I			4
	0511-301, 302 Principles of Economics I and II	4	4	
	0603-200 Survey of Computer Science			4
	1016-225, 226 Alg for Mgmt Sci; Calc for Mgmt Sci	4	4	
	*Liberal Arts (Core)	4	8	4
	Contemporary Science Electives	4		4
	‡Physical Education	0	0	0
2	0101-301, 302 Financial and Managerial Accounting	4	4	
	0102-301, 302 Business Law I and II		4	4
	0102-310 Career Seminar II			1
	0106-334 Management Science			4
	0106-352 Applied Statistics II	4		
	*Liberal Arts (Core and Concentration)	8	8	8
	‡Physical Education	0	0	0
			WTR. SPR.	SPR. SMR.
3	0101-408, 409 Intermediate Accounting I and II		4	4
	0101-431 Cost Accounting	4		
	0101-522 Tax Accounting I	4		
	0102-420 Principles of Management	4		
	0102-430 Organizational Behavior		4	
	0104-441 Corporate Finance	4		
	0105-463 Principles of Marketing			4
	0106-460 Operations Management		4	
	Elective			4
	*Liberal Arts (Electives)		4	4
		FALL WTR.		SGP. SMR.
4	0101-xxx Accounting Electives	4		4
	0102-507 Business Environment	4		
	0102-551 Integrated Business Analysis			4
	0106-505 Decision Support Systems	4		
	Electives	4		4
	*Liberal Arts (Electives)			4
	*Liberal Arts (Senior Seminar)			2

Students will select courses lor their major electives from those ottered through the various departments in the College of Business.
Students who wish to sit lor the CPA exam upon graduation must take the following as their professional electives: 0101-523, Tax Accounting II; 0101-540, Advanced Accounting; 0101-530, Auditing; 0101-550, Accounting Theory; and 0104-445, Advanced Corporate Finance.
‡See Pg. 24 lor Policy on Physical Education.
**See Pg. 102 for Liberal Arts requirements.*

Accounting Major Curriculum Chart



*These courses are required for New York State certification. If certification in another state is desired, the appropriate course will be selected.

Department of Finance

John S. Zdanowicz, Chairman

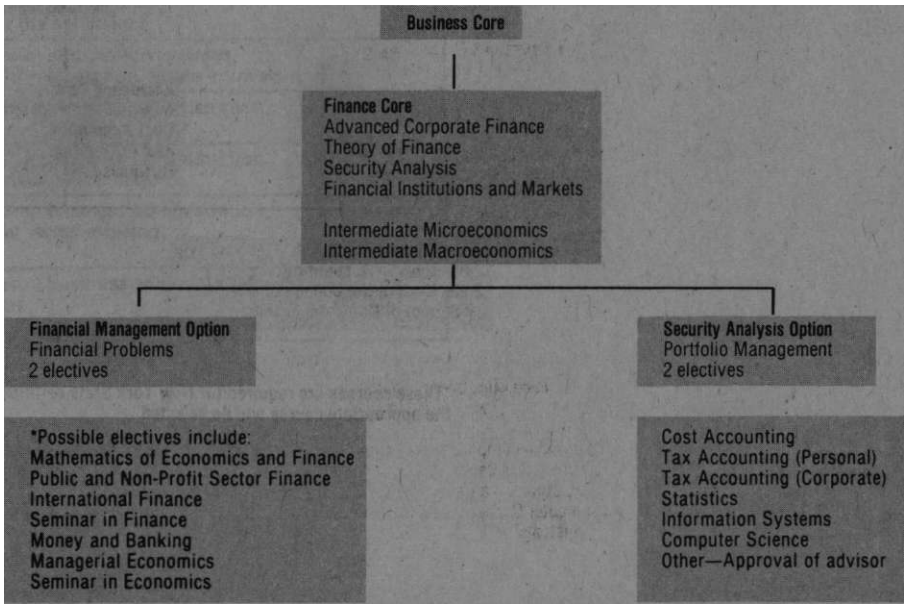
The finance major will prepare students for financial management positions in financial, commercial, industrial, and governmental organizations. Students are taught the principles of financial decision making and given an understanding of the economic, legal, and financial environment in which they must operate.

All students majoring in finance are required to complete the Finance Major Core and choose one of two options: financial management or security analysis. Financial management graduates would pursue positions in commercial, industrial, or governmental organizations, while the security analysis graduate usually will find positions in asset and securities management with financial institutions such as banks, brokerage houses, insurance companies, and real estate firms.

Yr.	Finance—typical Schedule	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	0102-210 Career Seminar I		1	
	0102-315 Legal Environment of Business	4		
	0511-301, 302 Principles of Economics I & II		4	4
	0603-200 Survey of Computer Science	4		
	1016-225, 226 Alg for Mgmt Sci; Calc for Mgmt Sci		4	4
	Contemporary Science		4	
	*Liberal Arts (Core)	8	4	8
	Physical Education	0	0	0
2	0101-301, 302 Financial Accounting & Managerial Accounting		4	4
	0102-310 Career Seminar II	1		
	0106-334 Management Science			4
	0106-351, 352 Applied Statistics I & II	4	4	
	*Liberal Arts (Core)	4	4	
	*Liberal Arts (Concentration & Electives)	4	4	8
	Contemporary Science	4		
	Physical Education	0	0	0
				SPG. SMR.†
3	0102-420 Principles of Management		4	
	0102-430 Organizational Behavior			4
	0103-405 Intermediate Microeconomics	4		
	0103-406 Intermediate Macroeconomics		4	
	0104-441 Corporate Finance	4		
	0104-445 Advanced Corporate Finance		4	
	0104-507 Security Analysis		4	
	0104- Financial Problems/Portfolio Management			4
	0104-525 Theory of Finance			4
	0105-463 Principles of Marketing	4		
	0106-460 Operations Management	4		
	Major Elective			4
		FALL WTR.††		SPG.
4	0102-507 Business Environment	4		
	0102-551 Integrated Business Analysis			4
	0104-510 Financial Institutions and Markets			4
	0106-505 Decision Support Systems	4		
	*Liberal Arts (Senior Seminar)	2		
	Major Electives	4		4
	*Liberal Arts (Electives)	4		4

† This means either (a) Co-op Spring, Study Summer or (b) Study Spring, Co-op Summer
†† This means either (a) Co-op Fall, Study Winter, or (b) Study Fall, Co-op Winter
**See Pg. 102 for Liberal Arts requirements.*

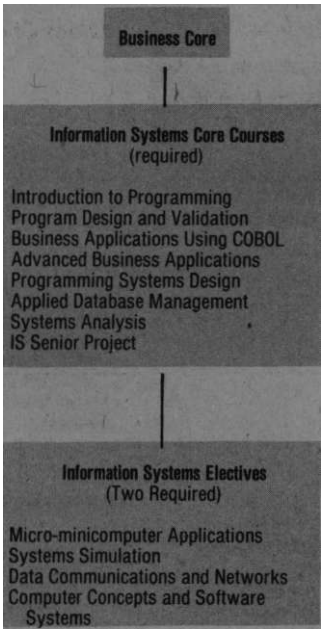
Finance Major Curriculum Chart



Yr.	Information Systems—typical Schedule	Qtr. Credit Hours FALL	WTR.	SPG.
1	0603-200 Survey of Computer Science	4		
	0601-208 Introduction to Programming		4	
	0601-210 Program Design and Validation			4
	0102-210 Career Seminar I			1
	0511-301, 302 Principles of Economics I and II		4	4
	1016-225, 226 Alg for Mgmt Sci; Calc for Mgmt Sci	4	4	
	Contemporary Science	4		4
	*Liberal Arts (Core)	4	4	4
	Physical Education	0	0	0
2	0601-300 Business Applications Using COBOL	4		
	0601-303 Advanced Business Applications		4	
	0601-363 Programming Systems Design			4
	0101-301, 302 Financial & Managerial Accounting	4	4	
	0102-310 Career Seminar II			1
	0102-315 Legal Environment of Business			4
	0106-334 Management Science			4
	0106-351, 352 Applied Statistics I & II	4	4	
	*Liberal Arts (Core)	4	4	4
	Physical Education	0	0	0
		FALL WTR.	SPG. SMR.	SMR. FALL
3	0603-483 Applied Database Management	4		
	0106-463 Systems Analysis and Design		4	
	Information Systems Elective			4
	0102-420 Principles of Management		4	
	0102-430 Organizational Behavior			4
	0104-441 Corporate Finance		4	
	0105-463 Principles of Marketing			4
	0106-460 Operations Management	4		
	*Liberal Arts (Core)	4		
	*Liberal Arts (Concentration)	4	4	4
4	0106-553 Information Systems Senior Project	4		
	Information Systems Elective		4	
	0102-507 Business Environment	4		
	0102-551 Integrated Business Analysis		4	
	Elective	4		
	*Liberal Arts (Senior Seminar)	2		
	*Liberal Arts (Electives)	4	8	

See Pg. 102 lor Liberal Arts requirements.

Information Systems Major Curriculum Chart



Department of Decision Sciences

Thomas A. Williams, Chairman

Information systems major

RITs information systems program is designed to prepare students for careers involving the development and management of computerized information systems. The extent of computerization in business has reached a level of sophistication that requires information systems personnel to possess business administration skills as well as expertise in business applications programming and systems analysis and design. An education at RIT can provide both.

Every student who completes the information systems program will be thoroughly trained in business applications programming. This does not mean that a major goal of the program is to train applications programmers for industry. However, it must be recognized that if an individual is to analyze and design information systems, he or she must know the methods available for implementation.

Department of Management

Robert F. Pearse, Chairman

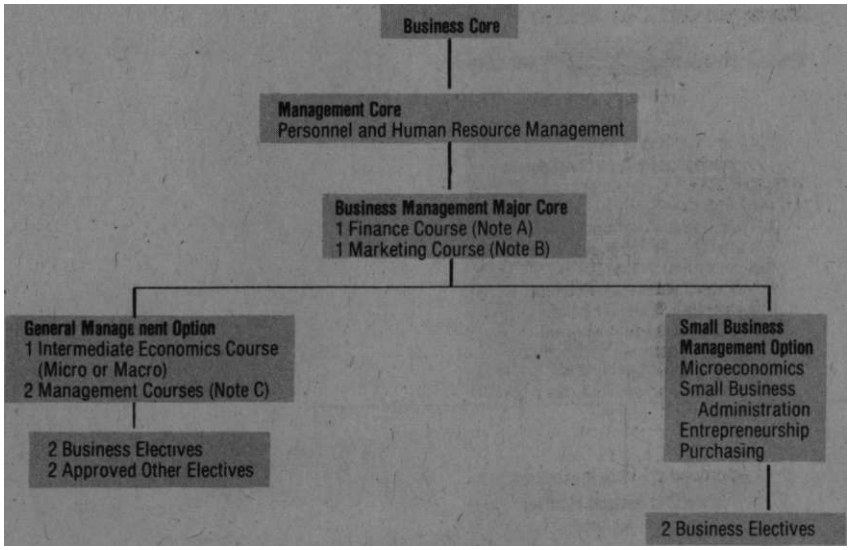
Business management major
The major is designed for students who wish to occupy general managment positions in a business organization. Careers may develop in areas as diverse as sales or production, and while most students will work in middle management, many will rise to the executive level.

The two options in this major are **general business management** and **small business management.** Although the two options are quite similar, small business management has required coursework in areas such as entrepreneurship, small business administration and intermediate microeconomics.

Yr.	Management Major - Typical Schedule	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	0102-210 Career Seminar I	1		
	0102-315 Legal Environment of Business			4
	0511-301, 302 Principles of Economics 1 & II	4	4	
	0603-200 Survey of Computer Science			4
	1016-225, 226 Alg for Mgmt Sci; Calc for Mgmt Sci	4	4	
	Contemporary Science	4		
	*Liberal Arts (Core) ..	4	8	8
	Physical Education .	0	0	0
2	0101-301, 302 Financial and Managerial Accounting	4	4	
	0102-310 Career Seminar II		1	
	0106-334 Management Science			4
	0106-351, 352 Applied Statistics I & II	4	4	
	Contemporary Science			4
	*Liberal Arts (Core) ..	4	4	
	*Liberal Arts (Concentration & Electives)	4	4	8
	Physical Education .	0	0	0
3				SPG. SMR-†
	0102-420 Principles of Management	4		
	0102-430 Organizational Behavior		4	
	0103-455 Personnel & Human Resource Management			
	0104-441 Corporate Finance			
	0105-463 Principles of Marketing			
	0106-460 Operations Management	4		
	Management Elective			4
	Marketing Elective ..			4
	Finance Elective		4	
	Economics Elective .	4		
	Elective			8
4		FALL WTR.††		SPG.
	0102-507 Business Environment			4
	0102-551 Integrated Business Analysis			4
	0106-505 Decision Support Systems	4		
	Electives	8		4
	*Liberal Arts (Senior Seminar)	2		
	*Liberal Arts (Electives)	4		4

† This means either (a) Co-op Spring, Study Summer or (b) Study Spring, Co-op Summer
†† This means either (a) Co-op Fall, Study Winter, or (b) Study Fall, Co-op Winter
**See Pg. 102 for Liberal Arts requirements.*

Business Management Major Curriculum Chart



Note A: Approved Finance Courses:
(choose one)
Inter. Microeconomics
Inter. Macroeconomics
Security Analysis
Adv. Corporate Finance
Theory of Finance
Financial Institutions

Note B: Approved Marketing Courses:
(choose one)
Consumer Behavior
Consumer Services Analysis
Advertising
Sales Management
International Marketing
Seminar in Marketing

Note C: Approved General Management Courses:
(choose two)
Employee and Labor Relations
Purchasing
Organization Theory
Small Business Administration
Seminar in Management

Yr. Personnel and Human Resource Management Major—Typical Schedule

Qtr. Credit Hours

Yr.		FALL	WTR.	SPG.
1	0102-210 Career Seminar I	1		
	0102-315 Legal Environment of Business			4
	0511-301, 302 Principles of Economics I & II	4	4	
	0603-200 Survey of Computer Science			4
	1016-225, 226 Alg for Mgmt Sci; Calc for Mgmt Sci	4	4	
	Contemporary Science	4		
	*Liberal Arts (Core)	4	8	8
	Physical Education	0	0	0
2	0101-301, 302 Financial and Managerial Accounting	4	4	
	0102-310 Career Seminar II		1	
	0106-334 Management Science			4
	0106-351, 352 Applied Statistics I & II	4	4	
	Contemporary Science			4
	*Liberal Arts (Core)	4	4	
	*Liberal Arts (Concentration & Electives)	4	4	8
	Physical Education	0	0	0
				SPG. SMR.†
3	0102-420 Principles of Management	4		
	0102-430 Organizational Behavior		4	
	0102-455 Personnel & Human Resource Management		4	
	0102-470 Compensation and Appraisal			4
	0102-475 Human Resources Planning			4
	0102-554 Seminar in Management		4	
	0104-441 Corporate Finance	4		
	0105-463 Principles of Marketing		4	
	0106-460 Operations Management	4		
	Electives			4
	*Liberal Arts (Elective)	4		4
		FALL WTR.††		SPG.
4	0102-480 Training and Development	4		
	0102-485 Employee and Labor Relations	4		
	0102-507 Business Environment			4
	0102-551 Integrated Business Analysis			4
	0106-505 Decision Support Systems	4		
	Elective	4		8
	*Liberal Arts (Senior Seminar)			2

†This means either (a) **Co-op** *Spring, Study Summer or (b) Study Spring, Co-op Summer*
†† This means either la) Co,op Fall, Study Winter, or (b) Study Fall, Co-op Winter
**See Pg. 102 tor Liberal Arts requirements.*

Personnel and Human Resource Management Curriculum Chart

Business Cora

Management Core
Personnel and Human Resource Management

Personnel and Human Resource Management Major Core
Compensation and Appraisal
Human Resources Planning
Training and Development
Employee and Labor Relations
Management Seminar

3 Business Electives
1 Approved Other Course

Personnel and human resource management major

This major is designed t6 provide students with the knowledge and skiffs necessary to pursue a career in personnel administration. Coursework in labor relations, compensation, human resource planning, etc. will provide the academic background necessary for one to be effective in this rapidly changing profession.

Department of Marketing

Eugene H. Fram, Chairman

Marketing major

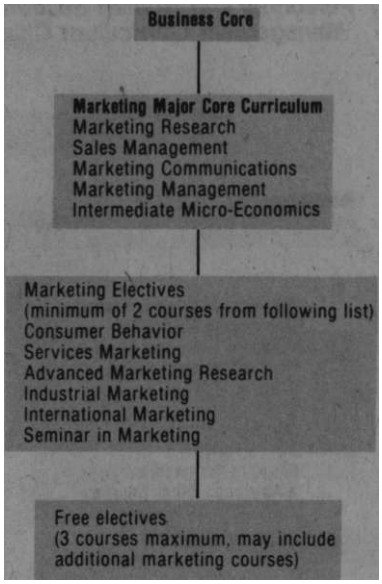
The marketing major prepares students to develop qualifications for entry-level management positions. In specific, students acquire management knowledge of markets, marketing, and people necessary to advance professionally. Students acquire this knowledge through a combination of academic education and 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 whose objective is 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.

Yr.	Marketing Major—Typical Schedule	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	0101-301, 302 Financial and Managerial Accounting		4	4
	0102-210 Career Seminar I		1	
	0106-351 Applied Statistics I			4
	0603-200 Survey of Computer Science		4	
	1016-225, 226 Alg for Mgmt Sci; Calc for Mgmt Sci.	4	4	
	Contemporary Science	4		
	*Liberal Arts (Core)	8	4	8
	Physical Education	0	0	0
2	0102-310 Career Seminar II			1
	0102-315 Legal Environment of Business			4
	0106-334 Management Science		4	
	0106-352 Applied Statistics II	4		
	0511-301, 302 Principles of Economics I & II	4	4	
	Contemporary Science			4
	*Liberal Arts (Core)	8		
	*Liberal Arts (Concentration & Electives)		8	8
	Physical Education	0	0	0
3	0102-420 Principles of Management	4		
	0102-430 Organizational Behavior		4	
	0103-405 Intermediate Microeconomics	4		
	0104-441 Corporate Finance	4		
	0105-463 Principles of Marketing	4		
	0105-551 Marketing Research		4	
	0105-553 Sales Management			4
	0105-560 Marketing Communications		4	
	0106-460 Operations Management		4	
	Elective			4
	*Liberal Arts (Elective)			8
4		FALL WTR.		SPG. SMR.
	0102-507 Business Environment	4		
	0102-551 Integrated Business Analysis			4
	0105-550 Marketing Management Problems			4
	0106-505 Decision Support Systems	4		
	Electives	4		4
	Marketing Electives	4		4
	*Liberal Arts (Senior Seminar)	2		

See Pg. 102 for Liberal Arts requirements.

Marketing Major Curriculum Chart



Yr.	Retail Management: typical Schedule	Quarter Credit Hours			
		FALL	WTR.	SPG.	SMR.
1	1016-225 Algebra for Management Science	4			
	0511-301 Principles of Economics I	4			
	0109-201 Introduction to the Retail Industry		4		
	1016-226 Calculus for Management Science		4		
	0511-302 Principles of Economics II		4		
	0603-200 Survey of Computer Science			4	
	0101-301 Financial Accounting			4	
	0102-210 Career Seminar I			1	
	*Liberal Arts (Core)	8	4	8	
	‡Physical Education	0	0	0	
2	0106-351, 352 Applied Statistics I & II	4	4		
	0101-302 Managerial Accounting	4			
	0109-301 Retail Accounting and Merchandise Control	4			
	0102-315 Legal Environment		4		
	0106-334 Management Science			4	
	0106-310 Career Seminar II			1	
	Contemporary Science		4	4	
	*Liberal Arts (Core)	4	4		
	*Liberal Arts (Concentration)			8	
3	0104-441 Corporate Finance	CO-OP	4		
	0105-463 Principles of Marketing		4		
	0109-401 Retail Store Operations and Management		4		
	0102-420 Principles of Management			4	
	0102-430 Organizational Behavior				4
	0106-460 Operations Management				4
	Electives		4	4	4
	*Liberal Arts (Concentration & Electives)			8	4
	‡Physical Education			0	0
4	0102-507 Business Environment	CO-OP	4		
	0109-501 Senior Seminar in Retail Management		4		
	0106-505 Decision Support Systems			4	
	0102-551 Integrated Business Analysis		4		
	Electives		4	8	
	*Liberal Arts (Elective)			4	
	*Liberal Arts (Senior Seminar)			2	
	‡Physical Education			0	

‡See Pg. 24 tor Policy on Physical Education.
*See Pg. 102 lor Liberal Arts requirements.

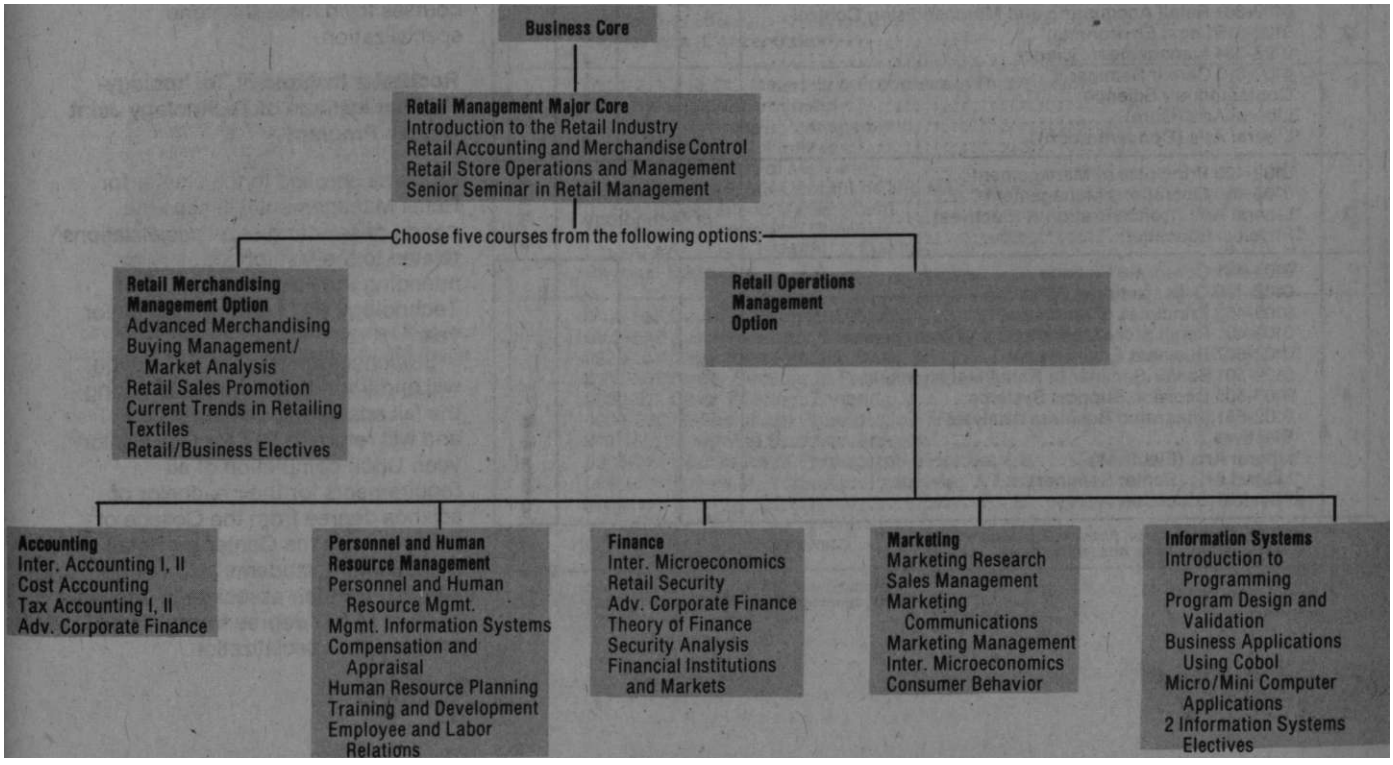
The Center for Retail Management

John S. Zdanowicz, Director

The College of Business at RIT has long recognized the increasing demand by the retail industry for well-trained business graduates. In order to meet this demand, the Col.lege of Business, through its Center for Retail Management, offers students the opportunity to earn a bachelor of science degreee in business administration with a major in retail management.

Retail management major
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. The retail management major employs all the functional areas of business, such as accounting, finance, personnel, marketing and information systems management, but

Retail Management Major Curriculum Chart



places 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.

Retail management core
All students in the Retail Management Major are required to complete the retail management core, which consists of the following four courses:
Introduction to the Retail Industry
Retail Accounting and Merchandise Control
Retail Store Operations and Management
Senior Seminar in Retail Management

These courses will carry students through a designed growth and learning process. The first course, a broadscale introduction to the contemporary retail industry, will focus on the distinctive characteristics of the industry, its current structure, and the nature of careers within the industry. The second course will focus on merchandising, the most important function of any retail operation. Topics will include the acquisition of goods, presentation, planning and control. The third course will reflect the operations function within the firms in the retail industry. It will be the foundation course for those students interested in careers in the non-merchandising areas of the industry. The final course will focus on current issues and strategic perspectives that are of concern to top-level retail managers. In addition to the four-course retail management core, students will be allowed to select six additional electives, which will prepare them in their area of specialization

Yr.	Retail Management Fashion Institute of Technology Option Schedule	Quarter Credit Hours			
		FALL	WTR.	SPG.	SMR.
1	1016-225 Algebra for Management Science	4			
	0511-301 Principles of Economics I	4			
	0109-201 Introduction to the Retail Industry		4		
	1016-226 Calculus for Management Science		4		
	0511-302 Principles of Economics II		4 -		
	0603-200 Survey of Computer Science			4	
	0101-301 Financial Accounting			4	
	0102-210 Career Seminar I			1	
	*Liberal Arts (Core)-	8	4	8	
	‡Physical Education	0	0	0	
2	0106-351, 352 Applied Statistics I & II	4	4		
	0101-302 Managerial Accounting	4			
	0109-301 Retail Accounting and Merchandising Control ...	4			
	0102-315 Legal Environment		4		
	0106-334 Management Science			4	
	0102-310 Career Seminar II			1	
	Contemporary Science		4	4	
	*Liberal Arts (Core)	4	4		
	*Liberal Arts (Concentration).			8	
3	0102-420 Principles of Management	Fashion Institute of Technology			4
	0106-460 Operations Management				4
	*Liberal Arts (Concentration & Electives)				8
	‡Physical Education				0
4	0104-441 Corporate Finance	CO-OP	4		
	0102-430 Organizational Behavior			4	
	0105-463 Principles of Marketing		4		
	0109-401 Retail Store Operations and Management		4		
	0102-507 Business Environment		4		
	0109-501 Senior Seminar in Retail Management			4	
	0106-505 Decision Support Systems			4	
	0102-551 Integrated Business Analysis				4
	Electives			4	4
	*Liberal Arts (Electives)				8
	*Liberal Arts (Senior Seminar)				2
	‡Physical Education			0	0

‡See Pg. 24 lor Policy on Physical Education.
**Sea Pg. 102 for Liberal Arts requirements.*

Retail merchandising management option. The electives suggested in the retail merchandising management option will prepare students for careers in buying and merchandise control. This option emphasizes vendor and consumer analysis, merchandise selection, planning and control, the relationship between merchandise control and financial control, the application of the computer in the merchandising function. Students selecting this option will also have the opportunity of spending a week "in the market" in New York City in order to gain exposure to the activities of a buyer.

Retail operations management options. Students selecting this option will have the opportunity of selecting electives from the course offerings of other departments in the College of Business. This option will allow students to develop their skills for management careers in the various operations functions of the retail industry, such as accounting, finance, marketing, personnel and human resource management and information systems. Students who choose this option should consult with their academic advisor in order to select electives which are compatible with their career objectives. The following are suggested electives for various sub-specializations in the retail operations management option. Students may elect to enroll in courses from more than one specialization.

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

Students enrolled in the Center for Retail Management 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.

Students selecting the FIT option will enroll for 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 and the Center for Retail Management, students also will be certified for their associate in applied science (AAS) degree from FIT in their area of specialization.

Co-op
Students who select this joint degree program will be required to complete one quarter of full-time, paid, cooperative work experience. Additional co-ops are available for students who wish to gain additional experience.

Fashion Institute of Technology
The Fashion Institute of Technology, located at 27th St. and Seventh Avenue in New York City, is a specialized college under the program of the State University of New York. FIT is devoted exclusively to developing students for creative careers in the fashion and its many allied industries. FIT'S location and curriculum will provide students with an academic year of concentrated study of the many different segments of the fashion industry. Students who select the RIT-FIT joint degree program will have the option of selecting one of the following seven areas of specialization and will be required to complete the courses for their selected specialization during their junior year at the FIT campus.

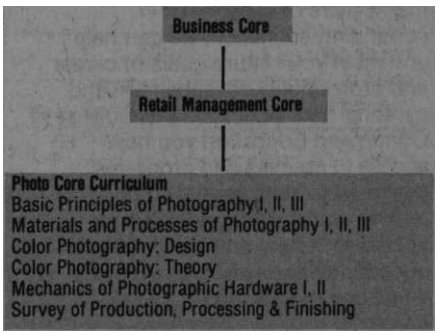
RIT-FIT Joint Degree Program Chart

*The areas of specialization listed represent the seven majors in which students may receive an AAS degree upon completion of the RIT BS degree program in retail management. Details on each of these areas may be obtained from the School of Retail Management.

Photographic marketing management major
The photographic marketing management major is a joint degree program offered by the Center for Retail Management 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.

Cooperative work experience is optional for students majoring in photographic marketing management.

Photographic Marketing Management Major Curriculum Chart



Yr.	Photographic Marketing Management—typical Schedule	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	1016-225 Algebra for Management Science	4		
	0511-301 Principles of Economics I	4		
	0109-201 Introduction to the Retail Industry			
	1016-226 Calculus for Management Science		4	
	0511-302 Principles of Economics II		4	
	0603-200 Survey of Computer Science			4
	0101-301 Financial Accounting			4
	0102-210 Career Seminar I			1
	*Liberal Arts (Core)	8	4	8
	‡Physical Education	0	0	0
2	0905-201, 202, 203 Principles of Photography I, II, III	4	4	4
	0109-301 Retail Accounting and Merchandising Control	4		
	0106-351, 352 Applied Statistics I & II	4	4	
	0101-302 Managerial Accounting	4		
	0106-334 Management Science			4
	0102-310 Career Seminar II			1
	*Liberal Arts (Core)		8	
	*Liberal Arts (Concentration)			8
3	0903-211, 212, 213 Materials & Processes of Photography	3	3	3
	0102-315 Legal Environment	4		
	0102-420 Principles of Management	4		
	0104-441 Corporate Finance		4	
	0105-463 Principles of Marketing			
	0109-401 Retail Store Operations and Management			4
	0106-460 Operations Management			4
	0102-430 Organizational Behavior			4
	*Liberal Arts (Concentration & Elective)	4	4	
	‡Physical Education	0		0
4	0106-505 Decision Support System		4	
	0102-507 Business Environment	4		
	0920-311 Color Photography: Design	4		
	0109-501 Senior Seminar in Retail Management			4
	0920-312 Color Printing: Theory		4	
	0905-320 Mechanics of Photographic Hardware I	4		
	0102-551 Integrated Business Analysis			4
	0905-321 Mechanics of Photographic Hardware II		4	
	0905-310 Survey of Production Processing & Finishing			
	Electives	4		4
	*Liberal Arts (Electives)		4	4
	*Liberal Arts (Senior Seminar)			2

‡See Pg. 24 for Policy on Physical Education.
*See Pg. 102 tor Liberal Arts requirements.

College of Continuing Education

Donald D. Baker, Dean

At Rochester Institute of Technology, the College of Continuing Education is your access to the future. With many years of experience in continuing education, we can help you meet your future goals of career and professional advancement and personal satisfaction. At the College of Continuing Education you have access to courses and programs designed to keep pace with rapid technological changes. You have access to faculty and staff who are experienced professionals in their fields and in working with adult students. You have access to academic advisors who will help you tailor a program to meet your needs. And, you have access to the services and facilities at Rochester Institute of Technology, long known as a forerunner in career education and development.

We know that time, now and in the future, is often your biggest problem. We give you an alternative to full-time study through part-time study at night, on weekends, or during the day. Working closely with the other eight colleges of the Institute, we develop flexible educational opportunities for you. Class hours and course offerings are scheduled to meet specific needs of employers, employees and non-working people alike. As a result, many people attain educational goals not otherwise available.

Our Open Admission Policy allows you to take any course or to pursue any degree for which you have sufficient background. Academic advisors are available throughout the year to answer questions regarding your course or program choices.

If you choose to follow a specific program of study, you have numerous options in fields as diverse as management and photography, machine tool and general education. We also offer you diploma programs in 19 fields, as well as a certificate in management. If you are interested in earning your associate degree in applied science, we have 22 options from which to choose. An associate in arts degree is also available to you in general education.

The bachelor of science programs in business, previously offered by the College of Continuing Education, recently were transferred to the College of Business. Likewise, the bachelor of technology programs in electrical and mechanical technology are now offered through the College of Applied Science and Techology.

If you're a graduate student, the master of science degree is offered in applied and mathematical statistics.

The college also offers workshops, seminars and short courses to meet specific needs of community groups, professional organizations, agencies, industries, government and business. Non-credit programs include offerings as diverse as career exploration seminars, workshops in professional development for secretaries, breakfast seminars for managers and continuing education for health and field personnel.

We offer another alternative through the college Summer Session. Along with the opportunity for you to continue work in your chosen academic program, RIT's unique summer offerings also feature learning opportunities for students from other colleges and representatives from business and industry. Concentrated courses combining the resources of the entire Institute are offered in numerous subject areas and unusual formats.

If you want to be ready to meet the future's challenges through career growth updating skills, or just by keeping abreast with technological and societal changes, then let RIT's College of Continuing Education be your access to the future.

School of Applied Industrial Studies

James D. Forman, Director

The School of Applied Industrial Studies (SAIS) in the College of Continuing Education was initiated in the late 1970's to help meet the needs of Rochester industry for skilled workers. With renovated classrooms, laboratory and office facilities and an extensive range of up-to-date equipment, SAIS was established at RIT's City Center in downtown Rochester.

Programs

SAIS offers one-year (12-month) programs leading to a diploma of the Institute in the following fields: 1) drafting technology; 2) automated equipment technology; 3) machine tool technology; and 4) packaging machinery mechanics.

All programs are designed especially to prepare persons for entry-level positions in a wide range of industrial organizations.

Job placement

SAIS retains a full-time staff to assist with all aciivities related to job placement. The school has contacts with hundreds of employers who commonly hire the graduates, and every effort is made to provide graduates with as many opportunities as are available.

A continuous effort is made to develop new and wide-ranging job opportunities for SAIS graduates in all of the program fields.

Admissions requirements

The School of Applied Industrial Studies offers admission to high school graduates (or equivalent) who have an interest in and an aptitude for the specific technical field. Applicants are accepted on a continuous basis through the year for admission to any one of the three entry dates; fall (September), winter (December), and spring (March).

Those who wish to enroll in specific courses or who wish to pursue the program on a part-time basis must meet the general program requirements and (if appropriate) any course prerequisites.

Admission information and applications should be obtained directly from the School of Applied Industrial Studies, 33 N. Fitzhugh St., Rochester, N.Y., 14614 (telephone [716] 262-2736).

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 which 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 students with ample opportunities to work with up-to-date equipment in their respective fields. The laboratories are structured and outfitted to provide basic laboratory work as part of the engineering curricula, to offer students the opportunity for independent laboratory projects, and to provide facilities for fundamental research by students and faculty. The Computer Engineering Department utilizes its own growing facility plus those of the Electrical Engineering Department and the School of Computer Science and Technology. The new program in microelectronic engineering utilizes its own growing laboratory facility as well as existing laboratories in electrical engineering and photo science.

Cooperative Education plan

Year		Fall	Winter	Spring	Summer
1 and 2		RIT	RIT	RIT	Work
3 and 4	A	RIT	Work	RIT	Work
	B	Work	RIT	Work	RIT
5	A	RIT	Work	RIT	–
	B	Work	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 sections; in any given quarter, one section follows cooperative employment while the other attends classes. Employment arrangements are made by each student through the co-op coordinator in Central Placement. 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 virtually all cases, accepted graduates of the two-year engineering science programs are able to enter the regular third year program in any of RITs five engineering programs.

For those students who have completed programs in electrical or electronics technology with a high scholastic average, there is a three-year AAS Transfer program leading to a bachelor of science degree in electrical engineering. Two-year electrical technology graduates will, of course, wish also to consider the educational opportunities available to them through RITs upper-division bachelor of technology programs in the School of Engineering Technology.

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. Satisfactory completion of the program with no failing grades.
2. A minimum number of quality points equal to at least twice the number of quarter hours required.

Prospective students should consult the individual program descriptions for additional information.

Accreditation
The programs of study leading to the bachelor of science degree in electrical engineering, industrial engineering and mechanical 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. The programs in computer engineering and microelectronic engineeering are "registered for professional purposes" with the State Education Department of the State of New York as a preparatory step to seeking ABET accreditation. All graduating seniors are eligible 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 Mechanical and Electrical Engineering programs 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 either Electrical or Mechanical Engineering should contact the relevant department head.

Graduate degrees
Programs leading to the master of science degrees are offered in both the electrical engineering and mechanical engineering departments. The programs may be pursued on a part-time of 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 engineeering, industrial engineering, mechanical engineering, environmental studies, engineering management, 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 Chariman 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» admission requirements, procedures and services Is Included In detail on pages 14-15 ol this Bulletin.

Five-five year cooperative programs leading to the BS degree are offered. The four majors are: electrical, computer, 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 mechanical, industrial, and electrical 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 offers a blend of computer science and electrical engineering which is designed to enable the graduates to intelligently incorporate computers within engineering products. 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.

Mechanical Engineering—Students devote the first two years to the study of mathematics, physics, chemistry, and mechanics. There are two options in upper years-applied mechanics, and thermal fluid sciences. Degree granted: BS-5 year.

Freshman Admission Requirements **Transfer Admission with junior standing**

Program	Required High School Subjects*	Desirable Elective Subjects	Two-Year College Programs	Desirable Minimum GPA
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)	2.5 3.50
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).	3.50
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).	2.50
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).	2.50
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).	3.00

**Four years of English are required in all programs, except where state requirements differ. A substantial number of professional and tree electives are also available.*

Microelectronic Engineering—Offered in conjunction with the College of Graphic Arts and Photography and the College of Science, the new five-year program will emphasize the photolithographic aspects of microelectronic processing. It will provide the broad interdisciplinary background in optics, chemistry, device physics, computers, electrical engineering, and statistics necessary for entry into the microelectronic industry.

Electrical Engineering AAS Transfer program—
This is a specialized program that provides a clearly defined route to the bachelor of science degree in Electrical Engineering for holders of an AAS degree in electrical technology. Incoming students enroll in transfer adjustment courses the summer before entering as third-year students. Degree granted: BS-3 year, at RIT.

Electrical Engineering

S. Madhu, Head
R. Unnikrishnan, Associate Head

The cooperative five-year engineering program

The bachelor of science program in electrical engineering at RIT has been developed in direct response to the increasing diversity in talent and training required of engineers by society. While providing a sound engineering core, the program offers significant opportunity for personalized curriculum planning. Individualized study plans may range from intense specialization to broad general coverage with ample opportunity for interdisciplinary activity in all cases. An integrated co-op work program adds this flexibility to produce a mature graduate with well-developed academic and industrial perspectives.

The role of the engineer has been defined as "applying the laws of mathematics and the principles of science to the solution of practical problems." Within this definition, the content of the program and the sequence of courses are easily understood.

The first two years of the program are devoted to the mastery of those laws of mathematics and principles of science with an introduction to engineering fundamentals. After this basic groundwork has been covered, the third year begins the study of core electrical engineering subjects in circuit theory and electronics, along with some advanced mathematics. The fourth year continues this exposure to basic electrical engineering topics in electro-magnetics, communications, controls, energy conversion, and advanced electronics.

The fifth and final year allows the student to specialize in areas suited to his or her professional interests. The professional electives may be taken, with the approval of the student's advisor, from courses offered by the Electrical Engineering Department, the College of Engineering and the College of Science. The free electives may be chosen from offerings anywhere in the Institute.

In today's world, engineering decisions are rarely taken in a vacuum but rather within an ethical and socio-economic framework. For this reason, spread throughout the curriculum are general studies courses which permit students to increase their understanding of this decision framework and to improve their ability to communicate effectively.

Yr.	BS degree in Electrical Engineering—Class of 1989	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	EEEE-200 Elect. Eng. Graphics	1		
	EEEE-240 Intro, to Digital Systems	3		
	SCHG-208, 209 Gen. Chem. for Engineers	4		4
	SMAM-251, 252, 253 Engr. 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
	ICSP-220 Fortran Prog, for Engineers		4	
	*Liberal Arts (Core)	4	4	4
	‡Physical Education Elective	0	0	0
2	EEEE-351 Circuit Analysis I			4
	EMEM-331, 349 Mechanics I, II	4		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 Phys. Lab. III	1		
	SPSP-314, 315 Modern Physics I, II		4	4.
	EEEE-310 Numerical Modeling			2
	*Liberal Arts (Core)	4	4	
	‡Physical 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 Electric and Magnetic Fields I			4
	SMAM-351 Probability and Statistics			4
	SMAM-420 Complex Variables	4		
	*Liberal Arts (Core)	4		
4	EEEE-554 Linear Systems II	4		
	EEEE-544 Physics of Electronic Devices	4		
	EEEE-531 Energy Conversion	4		
	EEEE-472 Electric and Magnetic Fields II	4		
	EEEE-513 Intro, to Classical Controls			4
	EEEE-534 Intro, to Communication Systems			4
	EEEE-545 Digital Electronics			4
	*Liberal Arts (Concentration)			4
5	EMEM-431 Thermodynamics	4		
	Professional Elective	4		4
	Professional Elective	4		4
	Free Elective			4
	*Liberal Arts (Concentration)	4		
	*Liberal Arts (Senior Seminar)			2

‡See *Pg. 24 for Policy on Physical Education.*
**See Pg. 102 for Liberal Arts requirements.*

Professional Electives in Electrical Engineering	Quarter Credit Hours
EEEE-S32 Electrical Machines	4
EEEE-535 Introduction to Power Electronics	4
EEEE-536 Motor Applications and Control	4
EEEE-614 Design of Controls System	4
EEEE-621 Transmission Propagation and Waves	4
EEEE-645 Special Semiconductor Devices	4
EE EE-650 Introduction to Logic and Switching	4
EEEE-665 Microcomputer Systems I	4
EEEE-666 Microcomputer Systems II	4
EEEE-670 Introduction to Microelectronics	4
EEEE-671 Hybrid Microelectronics	4
EEEE-672 Optical Devices and Systems	4
EEEE-674 Fiber Optics: Theory and Applications	4
EEEE-675 Analog Hybrid Computation	4
EEEE-6761.C. Processing Laboratory	4
EEEE-677 Digital Filters and Signal Processing	4
EEEE-679 Active and Passive Filters	4
EEEE-687 Power Systems Analysis	4
EEEE-693 Digital Data Communications	4
EEEE-695 Introduction to Audio Engineering	4
EEEE-696 Communication Circuit Design	4

Engineering Science transfer program
A powerful force in current engineering education is the emergence of the community college offering two-year programs in engineering science leading to the associate in science degree. In New York State these programs have resulted from the combined efforts of educators from both public and private institutions, and from both community colleges and major universities. Accordingly these programs represent and provide the general footing upon which engineering education must be based. The electrical engineering program at RIT is sufficiently related to these programs that transfer is possible and encouraged directly into the third year of the RIT curriculum, with a full two years' credit granted to the holders of an accredited AS degree in engineering science. Transfer students should see page 24 for policy on pysical education.

AAS Transfer Program
In addition to the transfer of students holding the AS degree in engineering science, the Electrical Engineering Department at RIT has a long and rewarding history of students transferring into electrical engineering from the successful completion of AAS programs in electrical technology at community colleges. A specialized program for these students is available in our AAS Transfer Program. This program is unique within the State of New York. It provides a clearly defined avenue to the bachelor of science degree for holders of the AAS degree in electrical technology.

Incoming students are brought to the campus in the summer (fourth) quarter immediately following their AAS program. On the basis of personal interviews with faculty members from mathematics, computer science, and electrical engineering, an individual program is designed for each AAS transfer student. The objective is to use this initial summer quarter to bring the students to the point where the remainder of their bachelor of science program can be constructed from existing, regularly scheduled Institute courses. Beyond this initial summer quarter, the AAS transfer student follows a co-op work plan leading to the bachelor of science degree at the end of his or her third academic year at RIT. Professional elective opportunities are also provided in this plan for the expression of individual student interests.

Yr.	**BS degree in Electrical Engineering - AAS Transfer Program**	**Qtr. Credit Hours**			
	This is a typical curriculum for a student with an AAS degree, who transfers to RIT's Electrical Engineering Department with 1 year of engineering calculus.	FALL	WTR.	SPG.	SMR.
	EEEE 351 Circuit Analysis L †				4
	ICSP-220 Fortran Prog, for Engr				4
	SMAM-305 Calculus IV				4
	*Liberal Arts (Core)				4
3	EEEE-310 Numerical Modeling	Co-op		Coop	2
	EEEE-352 Circuit Analysis II		4		
	EEEE-453 Linear Systems I				4
	EEEE-441, 442 Electronics I, II		4		4
	SMAM-306 Differential Equations		4		
	SMAM 328 Engineering Mathematics				4
	SPSP-314 Modern Physics I		4		
	*Liberal Arts (Core)				4
4	EEEE-554 Linear Systems II	Co-op	4	Co-op	
	EEEE-544 Physics of Electronic Devices		4		
	SMAM-351 Probability and Statistics				4
	SMAM-420 Complex Variables		4		
	EEEE 545 Digital Electronics				4
	EEEE-471 Electric and Magnetic Fields I				4
	*Liberal Arts (Concentration)		4		4
5	EMEM-431 Thermodynamics	Co-op		4	
	EEEE-472 Electric and Magnetic Fields II		4		
	EEEE-531 Energy Conversion		4		
	EMEM-331, 349 Mechanics I, II		4	3	
	Professional Electives		4	4	
	*Liberal Arts (Concentration)			4	
	Liberal Arts (Senior Seminar)			2	

All AAS transfer students will be required to take a minimum of 115 quarter credit hours at RIT, minus applicable transfer credits.
MS transfer students have Co-op during Fall and Spring quarters.
†Summer prior to third, year.
‡See Pg. 24 for Policy on Physical Education.
***See Pg. 102 tor Liberal Arts requirements.*

Yr.	**BS degree in Electrical Engineering - Engineering Science Transfer Program—Typical Program**	**Quarter Credit Hours**			
	Transfer students will generally follow the upper-division of the BSME program (years III, IV, V). However, it may be necessary to take some additional courses or substitute a course for a free elective if there are deficiencies corresponding to courses in the lower-division portion of the BSEE program (years 1 and II).	FALL	WTR.	SPG.	SMR.
3	EEEE-352 Circuit Analysis II	4	Co-op	- '4	Co-op
	EEEE-453 Linear Systems 1			**4**	
	EEEE-441, 442 Electronics 1, ll	4		4	
	EEEE-471 Electric and Magnetic Fields I			4	
	SMAM-351 Probability and Statistics				
	SMAM-420 Complex Variables	4			
	EEEE-340 Intro, to Digital Systems	4			
	EEEE-310 Numerical Modeling			2	
4	EEEE-554 Linear Systems II	4	Co-op		Co-op
	EEEE-544 Physics of Electronic Devices	4			
	EEEE-365 Intro, to Microcomputers	4			
	EEEE-472 Electric and Magnetic Fields II	4			
	EEEE-513 Intro, to Classical Controls			4	
	EEEE-534 Intro, to Communication Systems			4	
	EEEE-545 Digital Electronics			4	
	*Liberal Arts (Core) ___.			4	
5	EMEM-431 Thermodynamics	4	Co-op		
	EEEE-531 Energy Conversion .-	4			
	Professional Elective			4	
	Professional Elective	4		4	
	*Liberal Arts (Concentration)			4	
	*Liberal Arts (Concentration)	4		4	
	Liberal Arts (Senior Seminar)			2	

**See Pg. 102 for Liberal Arts requirements.*

Yr.	BS degree in Computer Engineering	Qtr. Credit Hours		
		FALL	WTR.	SPG.
	ICSP-241 Programming I Algorithmic Structures	4		
	ICSP-242 Programming II Data Structures		4	
	ICSP-243 Programming III Design & Implementation			4
	SCHG-208 Chemistry I	4		
	SCHG-210 Electrochemistry & Chemistry Metals		1	
1	SMAM-251, 252, 253 Calculus I, II, III	4	4	4
	SMAM-265 Foundations of Discrete Math			4
	SPSP-311, 312 University Physics I, II		4	4
	SPSP-375, 376 University Physics Lab I, II		1	1
	*Liberal Arts	4	4	
	‡Physical Education	0	0	0
	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-305 Assembly Language Programming	4		
	ICSP-325 Data Organization & Management		4	
	ICSP-319 Scientific Applications Programming			
	ICSP 430 Numerical Methods			4
2	SMAM-305 Calculus IV	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
	‡Physical Education	0	0	0
		FALL WTR.		SPG. SMR.
	EEEE-352 Circuit Analysis II	4		
	EEEE-441, 442 Electronics I, II	4		4
	EEEE-453 Linear Systems I			4
	ICSS-440 Operating Systems	4		
	ICSS-515 Analysis of Algorithms			4
	*Liberal Arts	4		4
	EECC-550 Computer Architecture I			4
	EECC-560 Interface & Digital Electronics	4		
	EECC-561 Digital System Design for Computer Engineers			4
4	EEEE-513 Introduction to Controls			4
	EEEE-554 Linear Systems II	4		
	ICSS-450 Programming Language Concepts	4		
	*Liberal Arts	4		4
	EECC-551 Computer Architecture II	4		
	EECC-655 Projects in Computer Engineering	4		
	EEEE-693 Digital Data Communications			4
5	**Professional Elective	4		4
	Free Elective			4
	*Liberal Arts	4		4
	Liberal Arts (Senior Seminar)			2

***Professional electives must have a 25% engineering design component.*
‡See Pg. 24 for Policy on Physical Education.
**See Pg. 102 for Liberal Arts requirements.*

Computer Engineering

Roy S. Czernikowski, Head

The computer engineering program has elements of an interdisciplinary program between electrical engineering and computer science but embellishes their offerings in this relatively new field of study. The program is designed to prepare the graduate both to design engineering products that closely incorporate or communicate with computers and also to undertake significant graduate study where sophisticated computer design can actually be addressed.

This program studies the electrical engineering aspects of the circuits and devices used in large scale digital systems and the mathematical theories of their description to permit the graduate to engage in the design and construction of these systems.

In addition, this program also investigates such areas of computer science as operating systems, programming languages and algorithms as well as such computer engineering topics as computer architecture, digital systems, interfacing and real time programming in order to intelligently integrate hardware and software into engineering products. The intensive laboratory requirements ensure the graduate of significant experience with various microcomputers in controlling engineering systems.

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 and thereby provide a stronger framework on which to build in the 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 2.00 cumulative grade point average in their principal field of study are subject to academic probations and suspension according to Institute policy.

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 process.

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 I.E. student, in consultation with his/her advisor, is able to build a minor concentration of study in business, mechanical engineering, electrical engineering, computer science and related fields.

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 General Chemistry for Engineers I, II	4		4
	SMAM-251, 252, 253 Engineering 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
	‡Physical Education Elective	0	0	0
2	EMEM-331 Mechanics 1 (Statics)	4		
	EMEM-332 Mechanics II (Dynamics)			4
	SMAM-305 Engineering Calculus IV	4		
	SMAM-306 Elementary 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
	‡Physical Education Elective	0	0	0
		FALL WTR.		SPG. SMR.
3	EIEI-420 Work Measurement & Analysis I	4		
	EIEI-520 Engineering Economy	4		
	EIEI-401 Introduction to Operations Research I	4		
	SMAM-351 Probability	4		
	SMAM-352 Applied Statistics			4
	EIEI-415 Human Factors			4
	EIEI-481 Management Theory & Practice			4
	EIEI-422 Systems & Facilities Planning			4
4	EIEI-510, 511 Applied Statistics 1, II	4		4
	EIEI-402 introduction to Operations Research II	4		4
	EIEI-503 Simulation	4		
	EIEI-516 Human Factors II	4		
	EIEI-630 Computer Aided Manufacturing			4
	EIEI-530 Engineering Design			4
5	EIEI-560 Project Design			4
	**Professional Elective	8		
	*Liberal Arts (Concentration)	4		4
	Free Elective			3
	Liberal Arts (Senior Seminar)			2

***At least one professional elective must be selected from the following courses: EMEM-431 Thermodynamics: EMEM-415 Fluid Mechanics I; EEEE-461, 462 Electrical Engineering I, II.*
‡See Pg. 24 for Policy on Physical Education.
**See Pg. 102 tor Liberal Arts requirements.*

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 recent 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 digs
   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 computer-ization 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 AAS in engineering science normally receive credit for the first two years and start their program at RIT with the third year class.

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 of 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/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 two 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.

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, 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 students have access to one VAX-11/782 and four VAX-11/780 computers. Also, the department has Tektronix and Hewlett-Packard computer graphics systems.

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

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 General Chemistry for Engineers I, II	4		4
	EMEM-201 Mechanical Engineering Graphics I	4		
	SPSP-311, 312 University Physics I, II		4	4
	SPSP-375, 376 University Physics Lab I, II		1	1
	EMEM-343 Materials Processing		4	
	*Liberal Arts (Core)	4	4	4
	‡Physical Education Elective	0	0	0
2	EMEM-336 Statics	4		
	EMEM-337, 338 Strength of Materials I, II		4	4
	SPSP-313 University Physics III	4		
	SPSP-377 University Physics Lab III	1		
	SMAM-305 Calculus IV	4		
	SMAM-306 Differential Equations		4	
	EMEM-340 Mechanical Engineering Graphics II		2	
	EMEM-341 Introduction to Fortran Programming		2	
	*Liberal Arts (Core)	4	4	
	EEEE-461 Electrical Engineering I			4
	SMAM-318 Intro, to Part. Dif. Eq			4
	EMEM-344 Materials Science			4
	‡Physical Education Elective	0	0	0
		FALL WTR.		SPG. SMR.
3	EMEM-413, 414 Thermodynamics I, II	4		4
	EEEE-462 Electrical Engineering II	4		
	EMEM-437 Introduction to Machine Design	4		
	*Liberal Arts (Core)	4		
	EMEM-415 Fluid Mechanics I			4
	EMEM-439 Dynamics I			4
	EMEM-440 Numerical Modeling			4
4	EMEM-514 Heat Transfer I	4		
	EMEM-543 Dynamics II	4		
	EMEM-516 Fluid Mechanics II	4		
	SPSP-314 Modern Physics	4		
	EMEM-544 Dynamics of Phys. Systems I			4
	Group I course			4
	Group I course			4
	*Liberal Arts (Concentration)			4
5	Group I course	4		
	Group II courses	4		4
	EMEM-501 Mechanical Engineering Laboratory	4		
	Elective course			4
	Elective course			4
	*Liberal Arts (Concentration)	4		4
	Liberal Arts (Senior Seminar)			

***This course can also be taken during Fall or Winter.*
‡See Pg. 24 for Policy on Physical Education.
**See Pg. 102 for Liberal Arts requirements.*

technology. The addition of significant numbers of transfer students to our regular undergraduate students provides RITs 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. In a few cases it may be necessary to adjust one or two courses in our program to accommodate differences in the programs of preparation in the first two years. However, these changes are generally minor.

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. Because the basic philosophies underlying the technology programs and the engineering programs are significantly different, the AAS graduate in technology requires a somewhat special program to adapt his or her previous educational experience to the BS program in engineering. Recognizing that no single program of study can effectively integrate all mechanical technology graduates into the engineering curriculum, each qualified transfer student is given a specific program of study that best meets his or her career goals, satisfies the basic requirements for the BS degree, provides meaningful cooperative work experience, and permits the student to fulfill the degree requirements in a reasonable period of time.

Extended day schedule

The extended day schedule, offered in the late afternoon and early evening hours, is designed for those who already have an AS (engineering science) degree, are presently working, and who seek an accredited BSME degree. The requirements under this schedule are exactly the same as the day schedule. Further details can be obtained by contacting Professor Robert Ellson, (716) 475-2148, in the Mechanical Engineering Department or the department, (716) 475-2163.

Combined five-year BS/MS degree program

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 program is also available for the mechanical engineering student. A student enrolled in this program is required to successfully complete a minimum of 227 quarter credit hours. After completing this requirement the student is awarded the BS and MS degrees simultaneously. Admission into the program is based on the student's cumulative grade point average, which must be at least 3.0, letters of recommendation from the faculty, and a personal interview by a departmental committee. All students in the program are required to maintain a cumulative grade point average of at least 3.0. Further information regarding this program 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 program.

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-601 Alternative Energy Sources
EMEM-605 Applications in Fluid Mechanics
EMEM-635 Heat Transfer II
EMEM-652 Fluid Mechanics of Turbomachinery
EMEM-658 Engineering Vibrations
EMEM-660 Refrigeration and Air Conditioning
EMEM-672 Dynamics of Machinery
EMEM-694 Stress Analysis

Group II Courses
EMEM-608 Thermo-Fluids Design & 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-612 Gas Kinetics and Vacuum Engineering
EMEM-615 Robotics
EMEM-618 Computer-Aided-Engineering
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-689 Patent Law and Protection
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 five-year program emphasizes all aspects of microelectronic engineering. It will provide the broad interdisciplinary background in optics, chemistry, device physics, computer science, electrical engineering, photographic science, and statistics necessary for entry into the microelectronic industry.

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 micro-electronic 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	SMAM-251, 252, 253 Calc. I, II, III	4	4	4
	SCHC-211, 212 Gen. Chem	3	3	
	SCHG-230 Organic Chemistry			3
	SCHG-205, 206, 207 Chem. Lab. I, II, III	1	1	1
	EMCR-210 Intro, to Microelectronics	2		
	PPHS-205 Ph. Sci. for Eng. I	2		
	SPSP-311, 312 Univ. Phys. I, II		4	4
	SPSP-375, 376 Phy. Lab. I, II		1	1
	*Liberal Arts (Core)	4	4	4
	‡Phys. Ed	0	0	0
2	SMAM-305 Calc. IV	4		
	SMAM-306 Diff. Equations		4	
	SMAM-328 Eng. Math			4
	SPSP-313 Univ. Phys. III	4		
	SPSP-314 Mod. Phys		4	
	SPSP-315 Intro. Semi. Phys			4
	SPSP-377 Phys. Lab. III	1		
	PPHS-433, 434 Statistics I, II	4	4	
	ICSP-220 Fortran		4	
	EMCR-340 I.C. Technology			2
	PPHS-207 Ph. Sci. for Eng. II			2
	EEEE-351 Circuit Anal. I			4
	*Liberal Arts (Core)	4		
	‡Phys. Ed	0	0	0
		FALL WTR.		SPG. SMR.
3	EEEE-352 Circuit Analysis II	4		
	EEEE-441, 442 Electronics I, II	4		4
	EMCR-440 Linear Systems			4
	PPHS-541 Fundamentals of Optics	4		
	PPHS-543 Optical Engineering			4
	*Liberal Arts (Concentration)	4		4
4	EEEE-545 Dig. Elect			4
	EMCR-640 Microelectronic Eng			4
	EMCR-530, 540 EM Fields I, II	4		4
	EMCR-560 Device Physics	4		
	PPHS-561, 563 Elect. Chem. I, II	4		4
	*Liberal Arts (Concentration)	4		
5	EEEE-365 Microprocessors	4		
	PPHS-441 Adv. Lithography			4
	PPHS-565 Elect. Chemistry III	4		
	EMCR-650 I.C. Proc. Lab	4		
	EMCR-630 Elect. Chemistry IV			4
	Sem./Res (EMCR-660 or PPHS-660)			4
	*Liberal Arts (Concentration)	4		4
	Liberal Arts (Senior Seminar)			2

‡See Pg. 24 for Policy on Physical Education.
**See Pg. 102 for Liberal Arts requirements.*

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 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 combining 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 Europe and the United States, and are well acquainted with contemporary practice in their art design or craft. While the teaching staff is composed of professional artists and craftspeople, able to practice their art or craft with distinction, they are, as well, interested and sympathetic teachers and counselors.

The Computer Center, available for student use, is equipped with Apple, Mergenthaler, Tetronics and Gemgraphics terminals. Photo darkrooms also support the assigned problems. The Craft Village provides additional support for blacksmithing, sculpture 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.

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. The college is a charter member institution of 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 associates 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 which leads 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 the 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 graduates, grade reports, transcripts and a log sheet that records completed courses and requirements.

It is recommended that each student select an advisor during orientation 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, industrial and interior design, painting, printmaking 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.

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 the 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 of 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 of 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 the studios 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 problems 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. 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.

The School of Art 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 elect, 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 8½" x 11" vinyl slide protector page with identification.

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
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 Included In detail on pages 14-15 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 for advertising, corporate design offices, government, magazines, industrial firms, printers, museums and other organizations.

Fine Arts—Students concentrate in printmaking, painting or medical illustration and take other art electives. They prepare as professional artists and through elective choices have exploratory potential for later careers in many of the visual arts fields or teaching. Performance levels are developed that enable graduate degree studies in studio concentrations. Medical illustrators enter research areas in hospitals and 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 product 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.

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 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—Requests for the double crafts major are reviewed after successful completion of two years of study in one major concentration. A portfolio is submitted, and if accepted into the second major, the student completes first and second year work in the second major during the junior and senior year.

Freshman Admission Requirements			Transfer Admission with junior standing	
Program[1]	**Required High School Subjects***	**Desirable Elective Subjects**	**Two-Year College Programs**	**Desirable Minimum GPA**
Graphic Design	1 year any mathematics; 1 year any science	Art courses; portfolio of original artwork required	Art, design or commercial art. Admission and class standing determined in part by evaluation of required portfolio. Where studentjacks sufficient art credit, a summer transfer program is offered at **RIT.**	2.0
Fine Arts -painting -printmaking •medical illustration	1 year any mathematics; 1 year any science; 2 years science for medical illustration	Art courses; portfolio of original artwork required, examples of nature 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.	2.0
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.**	2.0
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.	2.0
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.	2.0
Metalcrafts and Jewelry	1 year any mathematics; 1 year any science	Art or industrial courses; portfolio of original metals 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.	2.0
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.	2.0
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.	2.0

[1] *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).*

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 design and execution of projects in graphic, industrial and interior, and packaging design, painting, printmaking 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, 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.

The fine arts serve the student who is interested in concentrated study in areas of painting, printmaking, 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 Fall Quarter of the junior year. A tuition surcharge will be in effect that quarter.

The credit requirements for students admitted September 1981 in Fine Arts—Painting, Printmaking; 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.

Yr.	Graphic Design, Painting, Printmaking, Industrial and Interior Design 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
	*Liberal Arts	4	4	4
	‡Physical Education Elective	0	0	0
2†	FSCF-225, 226, 227 Art and Civilization	3	3	3
	*Liberal Arts	4	4	4
	‡Physical 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	8	8	8
	***FADD-301, 302, 303 Industrial and Interior Design			
	***FADP-301, 302, 303 Painting			
	***FADR-301, 302, 303 Printmaking			
	See **Note** Below			
3	FSCF-380 Contemporary Art (One quarter required; offered every quarter)	3		
	ΦArt History Electives (select two)		3	3
	*Liberal Arts	4	4	4
	Major (one)			
	FADR-401, 402, 403 Printmaking			
	FADC-401, 402, 403 Graphic Design			
	FADP-401, 402, 403 Painting	6	6	6
	FADD-401, 402, 403 Industrial and Interior Design			
	**Electives (one per quarter)*	3	3	3
4	*Liberal Arts	4	4	6
	Major (one)			
	FADR-501, 502, 503 Printmaking			
	FADC-501, 502, 503 Graphic Design			
	FADP-501, 502, 503 Painting	9	9	9
	FADD-501, 502, 503 Industrial and Interior Design			
	**Electives (one per quarter)*	3	3	3

†Upon 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 notice. 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: FADD-301, 302, 303 for Industrial and Interior Design major: FADP-301, 302, 303, for Painting major and FADR-301, 302, 303 for Printmaking major. However, all three Core Electives are available as elective choices.

ΦTotal of 18 quarter credits of Art History; Art and Civilization and Contemporary Art required.

‡See Pg. 24 for Policy on Physical Education.

**See Pg. 102 for Liberal Arts requirements. Fine and Applied Arts Students are only required to study 20 qt. 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 is two art core courses.

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
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
FSCW-251, 252, 253 Woodworking I
PPHF-207, 208 Introduction to Filmmaking
PPHF-209 Introduction to TV
PPHG-207, 208, 209 Still Photography
PPRT-201, 202, 203 Typographical Composition

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

YT.	Packaging Design	Qtr. Credit Hours		
		FALL	WTR.	SPG.
	IPKG-201 Principles of Packaging	4		
	FADF-230, 231, 232 Design 2-D	3	3	3
	FADF-240, 241, 242 Design 3-D	3	3	3
	SMAM-201 Algebra	3		
1	*Liberal Arts		4	8
	SSEG-201 Biology		4	
	SSEG-202 Chemistry			4
	‡Physical Education	0	0	0
	ICSS-200 Survey of Computer Science			
	IPKG-311 Packaging Materials 1	3		
	IPKG-312 Packaging Materials II		3	
	IPKG-315 Container Systems			4
	FADC-301, 302, 303 Introduction to			
2	Communication Design	3	3	3
	*Liberal Arts	4	4	4
	‡Physical Education	0	0	0
	IPKG-301 Engineering Design Graphics			
	IPKG-301 Methods of Evaluation	2		
	IPKG-401 Career Seminar			2
	IPKG-431 Packaging Production Systems	4		
	IPKG-432 Packaging for Distribution		4	
3	IPKG-433 Packaging for Marketing			4
	FADC-401, 402, 403 Packaging Design I, II, III	6	6	6
	SSEG-203 Physics	4		
	BBUM-263 Marketing Principles		4	
	*Liberal Arts			4
	Free Elective	2	4	
	FADC-501, 502, 503 Packaging Design IV, V, VII	6	6	6
	IPKG-420 Technical Communications		3	
	PPRT(-200 Introduction to Printing, recommended)		3	
4	PPRTI-206 Reproduction Photography, recommended)			3
	*Liberal Arts	4	4	6
	Free Elective	2		
	GLLC-501 Effective Speaking	5		

‡See Pg. 24 lor Policy on Physical Education.
**See Pg. 102 for Liberal Arts requirements.*

Yr.	**Medical Illustration option** (CFAA portfolio and additional six drawings of natural forms, to be presented as slides, are required for admission.)	Otr. 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
1	FADF-205, 206, 207 Creative Sources	2	2	2
	FADF-210, 211, 212 Drawing	4	4	4
	*Liberal Arts	4	4	4
	‡Physical Education Elective	0	0	0
	FSCF-225, 226, 227 Art and Civilization	3	3	3
	*Liberal Arts	4	4	4
	‡Physical Education Elective	0	0	0
	***FADP-311, 312, 313 Medical Illustration	3	3	3
	SBIG-201 General Biology	4		
	SBIG-211, 212 Human Biology		4	4
	‡Photography (A&D) for three quarters:			
	PPHG-207 Still Photography	3		
	PPHF-207 Introduction to Filmmaking		3	
	PPHF-209 Introduction to TV			3
	*Liberal Arts	4	4	4
	FADP-421, 422, 423 Medical Illustration Applications	5	8	8
	Gross Anatomy (U of R)†	7		
	**Art Elective		3	3
	*Liberal Arts	4	4	6
	FADP-531, 532, 533 Advanced Medical Illustration	6	6	6
	Select One; courses may be mixed:			
	FADE-411, 412, 413 Industrial and Interior Design			
	FADE-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.*
†A tuition surcharge will be applied in this quarter.
1Upon successful completion of the second year, the associate in applied science (fine arts—painting) degree is awarded.
‡See Pg. 24 for Policy on Physical Education.
**See Pg. 102 for Liberal Arts requirements. Fine and Applied Arts students are required to study only 20 qt. cr. of Liberal Arts core curriculum. They are advised to select from nine courses other than fine arts.*

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.

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 and interest for further study may continue for two additional years. After successful completion of the four-year program the bachelor of fine arts is awarded. After two years of study in one media field a student may present a portfolio and request admission to a second media concentration. If accepted, the student would complete first- and second-year work in the second media during the junior and senior year. 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
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 Topics

Yr.	Craft Majors	Qtr. Credit Hours FALL	WTR.	SPG.
1	FADF-201, 202, 203 Design	3	3	3
	FADF-205, 206, 207 Creative Sources	2	2	2
	FADF-261, 262, 263 Drawing	3	3	3
	*Liberal Arts	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			
	‡Physical Education Elective	0	0	0
2†	FSCF-225, 226, 227 Art and Civilization	3	3	3
	*Liberal Arts	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			
	**Electives (one per quarter)*	3	3	3
	‡Physical Education Elective	0	0	0
3	FSCF-380 Contemporary Art (one quarter required; offered every quarter)	3		
	ϕArt History Electives (select two)		3	3
	*Liberal Arts	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	*Liberal Arts	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

fUpon 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 concentration.
4>Total of 18 Quarter credits of Art History: Art and Civilization and Contemporary Art required.
tSee Pg. 24 lor Policy on Physical Education.
**See Pg. 102 for Liberal Arts requirements. Fine and Applied Arts students are only required to study 20 qt. cr. ol Liberal Arts core curriculum. They are advised to select from nine courses other than tine arts.*

The credit requirements are:

	qtr. cr.
Required Craft Major	87
Required Professional Electives	21
Open Electives	6
Liberal Arts	50
Art History	18
Creative Sources	6
	188

College of Graphic Arts and Photography

Dr. Mark F. Guldin, Dean

The College of Graphic Arts and Photography encompasses the School of Photographic Arts and Sciences, the School of Printing, 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 a BS degree in biomedical photographic communications, a BS degree in film and television, a BS degree in imaging and photographic science, 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 School of Business leads to a BS degree in photographic marketing management. Graduate programs lead to an MS degree in imaging and photographic science and to an MFA degree in photography. More than 1000 students are enrolled from nearly every state and many foreign countries. The curriculum in imaging and photographic science is the only accredited program of its kind leading to the BS and MS degrees.

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 offers programs leading to the bachelor of science 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 & 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 programs leading to an MS degree in printing technology. Over 600 degree candidates are enrolled in the School of Printing, with students from almost every state and many foreign countries.

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 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 and photographic industries.

The establishment of four distinguished professorships highlights this qualification of the college's teaching staff. The Paul and Louis Miller Distinguished Professorship in Newspaper Production Management in the School of Printing 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, which will complement the professorship, will clearly support efforts to further define color measurement in all areas of academic and industry endeavor. Together they have established Rochester Institute of Technology 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 in 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.

The RIT 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 makes 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 4,000 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 of every student 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 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 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 how students can prepare to meet new challenges evolving from them.

Academic Advising
The academic adyising 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. The Department of Academic Support Services maintains academic records, helps coordinate the advising system and provides assistance to the students, advisors, and faculty in the college.

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 degree in imaging and photographic science, printing technology, and the MFA degree in photography are to 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 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 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.

Information on summer programs in either school 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 RITs 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 the order department.

The Physical Testing Laboratory conducts industry-supported programs for testing paper, plates, blankets, inks and press chemicals. 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-categorized, fully indexed informative abstracts of the literature. GALA represents an expanded effort into current awareness and retrospective retrieval capability. The library is open to RIT graduate printing students and Technical and Education Center staff for research.

The Technical and Education 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 on the RIT campus offer 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 Conversation,* 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 make home research possible.

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.

Freshman Admission Requirements **Transfer Admission with junior standing**

Program	Required High School Subjects*	Desirable Elective Subjects	Two-Year College Programs	Desirable Minimum GPA
Professional Photographic Illustration and Fine Art Photography	2 years any mathematics; 1 year any science	Art courses	Applicant must have completed an associate degree program, or the equivalent 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 (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 Esthetics of Photography. Portfolio required.	2.2
Biomedical Photographic Communications	Elem. Algebra; Plane Geom. or Inter. Algebra; Trigonometry; Biology"	Chemistry; Physics	Associate's degree in biomedical photography or previous college work in audiovisual with strong emphasis in photography and biology.	2.2
Film & Television!	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) or scriptwriting (6 cr). Opportunities for transfer are limited. Portfolio required.	
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 transferring at the end of two years is readily accomplished for business majors. Others should contact program faculty for evaluation of credit.	2.2
Imaging and Photographic Science	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Physics and/or Chemistry	Chemistry 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 PPHS-200 and PPHS-210 or equivalent course, or experience-students in engineering science or liberal arts with math/science option usually meet these requirements. "	2.2
Technical Photography	Elem. Algebra; Plane Geom. or Inter. Algebra; 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.	2.2
Printing	Elem. Algebra and Inter. Algebra; 1 year science	Printing courses or experience with school publication; chemistry; physics; interest in printing; additional mathematics	Associate's degree in graphic arts including wide range of courses in liberal arts, a year of college mathematics, a year of college chemistry or physics, and courses in business, management, computers and others. Considered on an individual basis; Student should contact the department.	2.25
Newspaper Production Management	Elem. AJgebra; 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, a year of college chemistry or physics, and courses in business, management, computers and others. Considered on an individual basis, student should contact the department.	2.25
Printing Systems & Engineering	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Physics and Chemistry	Additional mathematics	Considered on an individual basis.	2.25
Printing and Applied Computer Science	Elem, Algebra; Inter. Algebra; Trigonometry; Plane Geometry; Physics or Chemistry	Additional mathematics and science	Considered on an individual basis.	2.25

** Four years of English are required in all programs, except where state requirements differ.*
*** A report is required from the applicant covering visits to photographic departments of at least two hospitals.*
† All applicants for BS degree program are required to submit a portfolio, which might consist of a series of 8 x 10 black-and-white photographs, an 8 or 16 mm film, a video tape, or a written work that demonstrates creativity in the English language.

Admission at a Glance: College of Graphic Arts and Photography

General Information on RIT» admission requirements, procedures and services Is Included In detail on pages 14-15 of this Bulletin.

The School of Photographic Arts and Sciences, the School of Printing 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 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 career in media production working with allied health teams in hospitals, medical and dental research centers, and other health institutions. Students can qualify for employment at the end of the second year and will have received the educational background necessary to apply for registration as a biological photographer. Degrees granted: AAS-2 year; BS-4 year.

Film and Television—The degree program in film and television features an introduction to both disciplines with advanced work in either film or video. The curriculum emphasizes production and short periods of outside professional experience are encouraged, usually during the summer. The program is intended to acquaint students with film and video as creative media and to develop the skills of production. Degrees granted: AAS-2 year; BS-4 year.

Imaging and Photographic Science- Students learn of the application of physics, chemistry, and mathematics to photography; of the application of 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 the newspaper industry by developing appreciation of tactics and strategies for evaluating and controlling production problems. Incorporates engineering approaches to problem solving. Degree granted: BS-4 year.

Photographic Processing and Finishing Management—Students develop a thorough knowledge of photographic processing, production techniques and procedures, and business, including aspects of promotion and selling in a competitive market. 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 ^ught. Degrees granted: AAS-2 year, BS-4 year.

Printing and Applied Computer Science—Prepares students for entry positions in printing systems analysis, production control, engineering liaison, customer engineering, marketing support, process engineering, and production design. These lead to careers in production management, director of computer technology, and operations manager. Degree granted: BS-4 year.

Printing Systems & 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. Degree granted: BS-4 year.

Professional Photographic Illustration—After two years of photography in the general BFA program at RIT, a student enters one of the following 3 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 esthetics, technical skills, and the ability to solve visual problems with imagination and originality. Degrees granted: AAS-2 year; BFA-4 year.

Technical Photography—Prepares students for entry into any of a variety of positions in the field of technical photography, as distinct from providing highly specialized training for a specific position. These include both picture-making positions (such as scientific photography, high-speed photography, 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). Degrees granted: AAS-2 year; BS-4 year.

School of Photographic Arts and Sciences

The program offerings of the School of Photographic Arts & Sciences are designed to prepare students for imaging and photographic 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 principals 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.

Speakers and field trips broaden the student's viewpoint. Participation in the field trips and summer study courses in Europe are encouraged.

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 - Thomas Iten, chairman
Department of Film and Video: BS degree in film and television - Martin Rennalls, chairman
Department of Fine Art Photography: BFA degree in professional photographic illustration, photography as a fine art option; MFA degree in photography - Dr. Richard D. Zakia, chairman
Department of Imaging and Photographic Science: BS degree in imaging and photographic science, MS degree in imaging and photographic science - Dr. Willem Brouwer, chairman.
Department of Photographic Technology: BS degree in biomedical photographic communications, BS degree in photographic processing and finishing management; BS degree in technical photography - Dr. Leslie Stroebel, chairman

Graduate programs
The School of Photographic Arts and Sciences offers two master's degree programs: MFA in photography and the MS in imaging and photographic science. These are described in the *Graduate Bulletin,* available through the Admissions Office.

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 fr lor Laboratories, Master Photo Dealers and Finishers Association, National Microfilm Association, Professional Photographers of America, Society of Motion Picture and Television Engineers. Society of Photographic Scientists and Engineers, 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.

Professional Photographic Illustration
Applicants for photographic illustration must have had two years of mathematics and one year of science. Art courses are recommended.

Biomedical Photographic Communications
Applicants for this undergraudate program must have had elementary algebra, plane geometry or intermediate algebra, trigonometry and biology. Chemistry and/or physics is recommended. A report is required from the applicant covering visits to photographic departments of at least two hospitals. A personal interview may be required.

Film and Television
Applicants must have had two years of any mathematics, and one year of science. A personal interview may be required. Art courses are recommended.

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.

Imaging and Photographic Science
Applicants for admission to the undergraduate program must have had three years of high school mathemetics through trigonometry and either physics or chemistry. Their high school record should indicate a capacity to undertake a science program with a reasonable chance of success.

Technical Photography
Applicants for admission to the technical photography program must have had two years of high school mathematics and one year of science.

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

Transfer admission

Transferring from another college or university
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.

Transfer credit and transfer programs
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 common first year in professional photographic illustration, technical photography, or film and television from imaging and photographic science 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 photography program.

Second-year entry (Transfer credit requirements):

Film and Television
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 (2 credits)
The remaining required courses in the first year:
Film History, PPHG-204, 205, 206 (9 credits)
Acting and Stagecraft I, II (8 credits)
must be made up during the second and third years of the program.

Professional Photographic Illustration
Normally, a minimum of 30 quarter credits of which there are 6 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 and PPHG-210 Materials and Processes of Photography with a "C" grade or better.

Imaging and Photographic Science
Normally, a minimum of 39 quarter credits of which there are 8 credits in a general chemistry course (including lab); 4 credits in an introductory organic chemistry course; 12 credits in differential and integral calculus; 12 credits in liberal arts; and 3 credits in additional math or science courses. The students must also complete the summer courses PPHS-200 Introduction to Photographic Science I with a "C" grade or better.

Technical Photography
Normally, a minimum of 34 credit hours of which there are 4 credits in a college algebra course; 6 credits in introductory calculus or the mathematics of business and finance; 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 or Photography I and PPHG-210 Materials and Processes of Photography with a "C" grade or better.

Third-year entry (transfer credit requirements):

Fine Art Photography
After successfully completing two years in RITs BFA foundation program, or two years 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 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/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 RIT Admissions Office, RIT, One Lomb Memorial Drive, Box 9887, Rochester, New York 14623.

Imaging and Photographic Science
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 must also complete the 10-week intensive summer courses PPHS—200 and 210, Introduction to Photographic Science I and II, with a "C" grade or better.

Professional Photographic Illustration Program

Contemporary/lilustrative/Commericat Photography Option

Narrative/Documentary/Editorial Photography Option

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: The photo students who elect the BFA program may produce advertising photography for magazines, direct mail pieces, posters, billboard, and packages. They may produce editorial photography magazine illustrations. They may illustrate brochures, annual reports, and other visual materials for business, government, and educational institutions. They are qualified to function as artists using photography as a principal means of expression. They may become scholars, photohistorians, or photojournalists.

Areas of concentration: The bachelor of fine arts program in professional photographic illustration is subdivided into 3 areas of concentration, each of which is varied enough to provide the student with a broad-based photo-graphic education. Each is also flexible enough in approach to provide the student who so desires to select those courses which provide for and best suit his or her particular needs. The first two years are common to fine art photography, contemporary/illus-trative/commercial photography, and narrative/documentary/editorial photography. After the second year the student plans a program that will

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 I	2	2	2
	*Liberal Arts (Core)	4	4	4
	‡Physical Education Elective	0	0	0
2†	PPHL-311, 312, 313 Applied Photo II	5	5	5
	PPHL-301, 302, 303 History & Aesthetics of Photo	3	3	3
	FADF-321, 322, 323 Design II	2	2	2
	PPHT-211, 212,213 Materials & Processes of Photography	3	3	3
	*Liberal Arts (Core)	4	4	4
	PPHL-315 Colloquia		1	
	‡Physical Education Elective	0	0	0

†Upon *successful completion of the second year, the associate in applied science degree is awarded.*
‡*See Pg. 24 tor Policy on Physical Education.*
**See Pg. 102 lor Liberal Arts requirements.*

Yr.	BFA in Professional Photographic Illustration with a Major in Photographic Fine Art	Qtr. Credit Hours		
		FALL	WTR.	SPG.
3	PPHA-401, 402, 403 Photography as a Fine Art, I	4	4	. 4
	FSCF-225, 226, 227 Art and Civilization	3	3	3
	ICSS-200 Survey of Computer Science	4		
	Visual Imaging Electives	3	3	3
	Liberal Arts	4	4	4
4	PPHA-501, 502, 503 Photography as a Fine Art, II	4	4	4
	FSCF-380 Contemporary Art			3
	Visual Imaging Electives	7	7	4
	Liberal Arts	4	4	6

Yr.	BFA in Professional Photography Illustration with a Major in Contemporary/Illlustrative/Commerclal Photography	Qtr. Credit Hours		
		FALL	WTR.	SPG.
3	PPHL-441, 442, 443 Contem/Illust/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/Illust/Commer 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
	CBGE-223 Small Business Marketing & Planning		4	

Yr.	BFA in Professional Illustration with a Major In Narrative/Documentary/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
	CBGE-223 Small Business Marketing & Planning		4	

fulfill his or her objectives. With an advisor, a tentative two-year program is planned for available courses that will meet the BFA degree requirements.

Electives
PPHF-207, 208, 209 Intro, to Video
PPHF-407, 408,409 Film History
PPHF-411 Visual & Commercial Film Production
PPHF-424,425,426 Introduction to Animation
PPHF-551 Special Topics
PPHL-301,302, 303 History/ Aesthetics of Photography
PPHA-401,402,403 Photo Fine.Art I
PPHL-411,412,413 Photo Journalism I
PPHL-431,432,433 Illustration Photo I
*PPHL-437, 438, 439 Visual Communication Workshop
PPHA-501, 502, 503 Photo Fine Art II
*PPHA-506, 507, 508 Photo Media Workshop
PPHL-511,512,513 Photo Journalism II
*PPHA-521 Color Photo Workshop
PPHL-531,532, 533 Illustration Photo II
*PPHL-551,552,553 Special Topics
PPHL-599 Independent Study
PPHM-301, 302, 303 Production Process & Finishing
PPHM-401,402 Photo Process Control
PPHM-510 Finishing & Lab Operation Management
PPHM-511, 512,513 Advanced Production Process & Finishing
PPHM-599 Independent Study
PPHP-408 Scientific & Tech. Applications of Photography
PPHP-409 Corporate and Special Interest Publications
PPHP-421,422, 423 Advertising Photography
PPHT-441, 442, 443 Advanced Color Printing
PPHP-501, 502, 503 Industrial Photo Seminar
*PPHP-521, 522, 523 Advanced Color Seminar
PPHP-541, 542, 543 Basic Portrait Photography
PPHP-551, 552, 553 Special Topics in Photo
PPHP-599 Independent Study

Photography as a Fine Art Option
Through the gradual development of each individual's sensitivity and imaging skills, the student is prepared for a broad range of career options that require a solid background in esthetics, technical skills, craftsmanship, and the ability and confidence to solve visual problems with imagination and originality.

The program is designed to encourage each student's artistic development, individuality of style and uniqueness as a photographer. The program does not train photographic technicians or photographers for specific jobs. Rather, fine art photography is designed to enhance students prospects for a lifetime of work that is interesting, challenging, and that offers the potential for growth and change.

Electives
Photography as a Fine Art
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-561 Semiotics and Photography
PPHA-599 Independent Study
PPHG-720 Photographic Workshop
PPHG-756 Zone System
PPHG-760 Perception and Photography
PPHG-767, 768,769 Contemporary Issues

Other visual imaging electives are available in Photojournalism, Illustration Photography, Nature Photography, Portrait Photography, Film and Video Production, Film History and Aesthetics, Animation, Reproduction Photography, Printing, Screen Printing, Computer Graphics, Painting, Drawing, Printmaking, Sculpture, Ceramics, Metalcrafts, Textiles, Woodworking, and Audio-Visual Production.

Biomedical Photographic Communications

The biomedical photographic communications program is designed to prepare the student for a career in

Yr.	Biomedical Photographic Communications	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	PPHB-201, 202, 203 Biomedical Photography I	6	6	6
	PPHG-211, 212, 213 Materials and Processes of Photography	3	3	3
	PPHB-211 Survey of Biomedical Photography			1
	SBIG-201, 202, 203 General Biology	3	3	3
	SBIG-205, 206, 207 General Biology Lab	f	1	1
	*Liberal Arts (Core)	4	4	4
	‡Physical Education Elective	0	0	0
	Summer (4th Quarter) Internship for 10 weeks in a medical setting			
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	8
	‡Physical Education Elective	0	0	0
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 Senior Thesis Project	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's degree awarded upon successful completion of second year
***Possible recommended professional electives:*
PPHF-201 Structuring the Moving image
PPHF-202 Narrative Film Production
PPRT-591, 592, 593 Reproduction Photography, Offset Plate Making, Offset Presswork
Electives will be made with the coordinator's permission
Other electives with advisor's consultation
****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.*
‡See Pg. 24 for Policy on Physical Education.
**See Pg. 102 for Liberal Arts requirements.*

media production within the scientific community. The biomedical photographer can be part of the allied health team in hospitals, medical and dental research centers or in other health institutions.

The first-year courses introduce basic theories and principles as well as practical experience with photographic equipment and photographic processing. The courses are integrated to prepare the student for a summer internship in a medical or scientific facility. The completion of the summer internship is required for the associate degree in biomedical photography.

The second-year rounds out the prerequisites for a beginning career in biomedical photography. Courses include photomacrography, photomicrography and other specific studies required for this career. The junior and senior years' curricula include electives in film making, television and advanced color printing, or others which can be selected in consultation with the advisor. A personal interview may be required of the candidate for this program. The student may be required to attend summer courses to satisfy prerequisite courses.

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 which will form the basis for qualifying to become a Registered Biological Photographer (RBP) after the student enters into his or her profession full-time.

Yr.	Film and Television	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 Structuring the Moving Image	5		
	PPHF-202 Narrative Film Production		5	
	PPHF-203 Fiction and Dramatic Short Film Production			5
	PPHF-204 Fiction Film and Aesthetics	3		
	PPHF-205 Documentary Film History and Aesthetics		3	
	PPHF-206 Experimental/Animated Film History & Aesthetics			3
	PPHT-210 Materials & Processes of the Moving Image I	2		
	Physical Education Elective	0	0	0
2	*Liberal Arts (Core)	4	4	4
	Science Elective	4	4	4
	PPHF-310 Materials & Processes of the Moving Image II	2		
	PPHF-311 Portable Video Production	4		
	PPHF-312 Studio & Documentary Video		4	
	PPHF-313 Electronic Field Production			4
	PPHF-324 Introduction to Animation	4		
	Elective Sequence (choose one)			
	PPHF-325 Introduction to Animation II		4	
	PPHF-326 Animated Production			4
	or			
	PPHF-321 Writing for Film and Video		3	
	PPHF-322 Writing for Film and Video			3
	Physical Education Elective	0	0	0
3	*Liberal Arts (Concentration)	4	4	4
	Non-Photo Elective ...	4	4	4
	PPHF-411 Visualization & Commercial Film Production	5		
	PPHF-412 Film Planning & Studio Operation		5	
	PPHF-413 Film Project with Sound			5
	PPHF-410 Materials & Processes of the Moving Image 3	2		
	PPHF-405 Senior Project Seminar			1
	Electives (choose one per quarter)			
	PPHF-420 Sound Recording	3		
	PPHT-505 High Speed/Time Lapse Cinematography	3		
	PPHF-321 Writing for Film and Video		3	
	PPHF-325 Introduction to Animation II		4	
	PPHF-434 Advanced Video		3	
	PPHF-322 Writing for Film and Video			3
	PPHF-326 Animated Production			4
	PPHF-432 Directing ...			3
	†Non-Film/Video Photo School course	3	3-4	3-4
4	*Liberal Arts (Electives)	4	4	4
	Non-Photo Elective ...	4	4	4
	*Liberal Arts (Senior Seminar)			2
	PPHF-541 Senior Production I	6		
	PPHF-542 Senior Production II		6	
	PPHF-543 Senior Post-Production			4

†Students may elect any still photography course tor which they have the required prerequisites and/or the permission ot the instructor. Such courses might include: PPHP-395 Photo *Electronic Workshop; PPHP-562,* 565 *Perceptual Principles for Photographers; PPHL-437, 438 Visual Communication Workshop; PPHL-440 News Writing & News Reporting; PPHL-301, 302, 303 History i Aesthetics ot Photography.*

**See Pg. 102 tor Liberal Arts requirements.*

Film and Television

The courses in film and television are designed for students who recognize the motion picture medium as an expressive force uniquely important to modern life. It will acquaint students with film and video as creative media and to develop the skills of production.

The degree program in film and television features an introduction to both disciplines with advanced work in either film or video. The curriculum emphasizes production and short periods of outside professional experience are encouraged; usually during the summer.

Courses are structured as lecture laboratory courses, designed to develop individual skills in communication with moving images and the aesthetic principles governing the art. Elective courses are offered to students in applied photography, photographic technology MFA photography. 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 and video projects are often designed by the individual student. Thus a wide variety of styles and intentions are expressed in the work of the department.

Photographic Processing and Finishing Management

The curriculum in photographic management is designed to prepare individuals to assume management positions in the photographic processing and finishing industry. The students pursuing this course of study will be involved with obtaining: 1) a thorough knowledge of the photoprocess in order to obtain the highest possible quality from the process; 2) production techniques and graphic procedures necessary to obtain quality in the shortest possible time; and 3) the business aspects of promoting and selling the economically-produced quality product in a competitive market.

Students in this program will spend a large portion of their time in our fully equipped color processing and finishing laboratory to gain hands-on experience in production, quality control, and management techniques.

This is a four-year baccalaureate program with the career objective of plant supervision and management; however, those choosing to terminate after two years are awarded the AAS degree and should qualify for area supervisory positions in a finishing plant.

Professional electives

BBUA-431,432 Cost Accounting I, II
BBUB-301 Business Law
BBUB-404 Management (Business Policy)
BBUF-281 Money and Banking
BBUF-441 Corporate Finance
GLLC-402 Conference Techniques
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
Others to be selected in consultation with advisors.

Yr.	Photographic Processing and Finishing Management	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	PPHM-211, 212, 213 Introduction to Photofinishing Technology...	4	4	4
	SMAM-204 College Algebra and Trigonometry	4		
	BBUB-420 Principles of Management			4
	PPHT-311 Color Photography/Design	4		
	PPHT-312 Color Printing/Theory		4	
	PPHT-313 Color Measurement/Instrumentation			4
	PPGM-204 Orientation to Production Photo Processing & Finishing	1		
	*Liberal Arts (Core)	4	8	4
	‡Physical Education Electives	0	0	0
2	PPHM-301, 302, 303 Production Processing and Finishing	4	4	4
	ITEE-310, 311, 312 Electricity and Electronics	4	4	4
	GSSE-301, 302 Economics I and II	4	4	
	ICSS-200 Survey of Computer Science			4
	*Liberal Arts (Core)	4	4	4
	‡Physical Education Electives	0	0	0
3	PPHM-401, 402, 403 Photographic Process Control	4	4	4
	PPHM-410, 411, 412 Training and Supervision	4	4	4
	SMAM-319 Data Analysis		4	
	PPHS-413 Statistics of Quality Control			3
	BBUB-430 Organizational Behavior	4		
	*Liberal Arts (Concentration)	4	4	4
	PPHM-506 Theory of Corrective Color Printing			2
	Summer Internship			
4	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
	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 Pg. 24 for Policy on Physical Education.
**See Pg. 102 for Liberal Arts requirements.*

imaging and Photographic Science

Photographic science is concerned with the materials and processes of photography and imaging science; photographic instrumentation with the application of photographic processes to science and technology. A primary objective of the photographic scientist is the improvement of existing materials and processes of photography and the development of new methods and materials. The instrumentation engineer is concerned with the planning of new applications of photography or the adaptation of existing methods to new or special requirements. Whereas chemists, physicists, and engineers of disciplines other than photography are employed in both of these activities, there is a need, on an increasing scale, for the specialist in imaging and photographic science.

A broad segment of American business is an employer of graduates of the Imaging and Photographic Science Department; aerospace, business machines, information handling, microelectronics, scientific instruments, graphic arts, industrial chemicals, and photographic materials and equipment. Aside from the industry, many graduates are employed by governmental agencies and laboratories. Graduates with an interest in marketing often move into positions as sales and technical representatives.

The Department of Imaging and Photographic Science offers three programs leading to both undergraduate and graduate degrees; a four-year program resulting in a bachelor of science degree, a five-year program resulting in simultaneous awarding of the bachelor of science and master of science degrees, and an MS degree program for students holding a bachelor of science degree in science or engineering.

In addition, it is possible for students with satisfactory credits in mathematics, chemistry, and physics to transfer into either the four-year or five-year program at the beginning of the second or third year by taking a transfer program during the summer quarter.

In recognition of the department's belief that much degree-relevant learning in imaging and photographic science can take place outside the Institute's classrooms, all undergraduates are encouraged to acquire summer photoscience industrial experience during their program at RIT.

Four-year program:
Bachelor of Science In Imaging and Photographic 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 the study of photographic materials and instrumentation. The photographic science core program then continues with courses in radiometry, the structure of images, color and vision, and methods of engineering photographic systems. Third and fourth year students select elective courses in imaging and photoengineering, science, mathematics, and undergraduate thesis is required.

Opportunities also exist to perform thesis work under the direction of selected scientists and engineers in other RIT colleges as well as from local industry as adjunct faculty.

Five-year program:
Bachelor of Science and Master of Science in Imaging and Photographic Science
Course content during the first three years is similar to the bachelor of science program and provides the student with a background in mathematics, chemistry, physics, and basic photographic science and instrumentation. The fourth year is spent taking advanced elective courses in chemistry, physics, engineering and/or imaging and photographic science. The fifth year is devoted to graduate courses and a graduate thesis.

Admission into the five-year program is normally made at the end of the third year. Completed applications should be sent to the Admissions Office.

Yr.	Imaging and Photographic Science	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	PPHS-201, 202, 203 Photography for Scientists & Engineers	5	5	5
	SCHC-211, 212 General Chemistry	3	3	
	SCHG-205, 206, 207 Chemical Principles Lab	1	1	1
	SCHO-230 Intro, to Organic Chemistry			3
	SMAM-251, 252, 253 Calculus	**4**	**4**	**4**
	*Liberal Arts (Core)	**4**	**4**	**4**
	‡Physical Education Elective	0	0	0
2†	PPHS-303 Photographic Instrumentation		**4**	
	PPHS-312 Applied Processing			**4**
	PPHS-313 Color Systems	**4**		
	SMAM-305 Calculus	**4**		
	SMAM-306 Differential Equations I		**4**	
	Computer Science Elective			**4**
	SPSP-311, 312, 313 University Physics	**4**	**4**	**4**
	SPSP-371, 372, 373 University Physics Lab	1	1	1
	*Liberal Arts (Core)	**4**	**4**	**4**
	‡Physical Education Elective	0	0	0
3	PPHS-401 Radiometry	**4**		
	PPHS-402 Image Microstructure		5	
	PPHS-404 Introduction to Scientific Research			2
	PPHS-411 Statistical Inference	3		
	PPHS-412 Statistical Design of Experiments		3	
	PPHS-413 Statistics of Quality Control			3
	Professional Electives (selected from undergraduate elective list).		Varies	
	PPHS-421, 422, 423 Photographic Chemistry (5 year BS/MS program—may also be taken in 4th year)	4	**4**	**4**
	*Liberal Arts (Core and Concentration)	**4**	4	8
4[1]	PPHS-501, 502, 503 Research	2	4	**4**
	PPHS-521, 522, 523 Imaging Systems and Evaluation	4	2	2
	Professional Electives (selected from undergraduate elective list)	To bring undergraduate credit to 194		
	*Liberal Arts (Concentration)	**4**	6	**4**
	*Liberal Arts (Concentration)	**4**	6	**4**
	PPHS-421, 422, 423 Photographic Chemistry (if not taken during 3rd year) 4[2]	**4**	**4**	**4**
	PPHS-890 Research	2		
	Professional Electives (selected from undergraduate elective list)	To bring undergraduate quarter credits to 194		
5[3]	PPHS-711, 712, 713 Theory of the Photographic Process	3	3	3
	PPHS-731, 732, 733 Instrumental and Photographic Optics	3	3	3
	PPHS-741, 742, 743 Analysis and Evaluation of Imaging Systems.	3	**4**	3
	PPHS-890 Research and Thesis Guidance			
	Professional Electives (selected from graduate elective list)	9 minimum To bring graduate quarter credit to 45		

[1] *Fourth Year BS program*
[2] *Fourth Year BS/MS program*
[3] *Filth Year BS/MS Program*
†Upon successful completion of the second year, the associate in applied serenes degree is awarded.
‡See Pg. 24 lor Policy on Physical Education.
**See Pg. 102 for Liberal Arts requirements.*

Graduate program:
Master of Science in Imaging and Photographic Science
The graduate program is designed to prepare persons holding a bachelor of science degree in physics, chemistry, or engineering for positions in the field of photographic science and instrumentation. Applicants without acceptable understanding of photographic materials and processes are required to take a summer course before final admission to the graduate program. This full-time summer course, PPHS-600 (Principles of Photographic Science) begins in June and runs for 10 weeks.

Certain graduate courses are offered during the evening on a rotating basis for those desiring to obtain the master of science degree on a part-time basis. Information regarding which courses are offered in which years during the evening may be obtained from the department.

The graduate program is administered by the Council on Graduate Studies and is under the direction of the graduate coordinator (see Graduate Bulletin for particulars).

Technical Photography

The technical photography curriculum has been designed to prepare students, for entry into any of a variety of positions in the broad field of technical photography, as distinct from providing highly specialized training for a specific position. These include both picture-making and non-picture-making positions.

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, motion-picture and television production, to more specialized courses in audiovisual production, high-magnification photography, high-speed photography, and non-conventional imaging systems. These picture making courses are balanced with courses in technical photographic subjects, mathematics, science, business, and liberal arts. Students are given some options and electives, including the opportunity of serving a summer internship following the third year in place of the research project in the fourth year.

Employment statistics maintained by RIT's Office of Central Placement Services, as well as results of an industry questionnaire done by the School of Photographic Arts and Sciences, indicate that there is demand for graduates with technical backgrounds for such positions as technical and sales representatives, technical writers, quality control personnel, product development and testing, applied research, laboratory supervision, scientific photography, technical illustration, audiovisual production, photographic testing, and management.

Yr.	Technical Photography	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
	**SMAM-204 College Algebra	4		
	SMAM-214, 215 Introductory Calculus, OR		(3)	(3)
	SMAM-216, 217 Mathematics of Business & Finance		(3)	(3)
	*Liberal Arts (Core)	4	4	4
	‡Physical Education	0	0	0
2†	PPHT-301 Photographic Sensitometry	3		
	PPHT-302 Technical Photographic Chemistry		3	
	PPHT-303 Photographic Optics			3
	PPHT-311 Color Photography/Design	4		
	PPHT-312 Color Printing/Theory		4	
	PPHT-313 Color Measurement			5
	SPSP-211, 212, 213 College Physics	3	3	3
	SPSP-271, 272, 273 College Physics Lab	1	1	1
	*Liberal Arts (Core)	4	4	4
	‡Physical Education	0	0	0
3	***Concentration Electives	4	4	4
	PPHT-411 Preparation of Visuals	3		
	PPHT-412 Photomacrography/Photomicrography			3
	PPHF-301 Conceptual Moving Image Production	5		
	PPRT-701 Research Methods in Graphic Arts		4	
	PPRM-201 Introduction to Technical Writing			3
	ICSS-200 Survey of Computer Science, OR			4
	ICSP-205 Computer Techniques			(3)
	PPHT-511 Internship Seminar		(1)	
	*Liberal Arts (Core and Concentration)	4	4	8
4	*** Concentration Electives	4	4	4
	PPHT-501 High-Speed/Time Lapse	3		
	PPHT-502 Introduction to Research	(1)		
	PPHT-503 Research Project, OR		(3)	
	PPHT-512 Internship		(3)	
	PPHT-504 Survey of Nonconventional Imaging Sys			3
	PPHF-417 Portable Video Production	4		
	BBUB-420 Principles of Management	4		
	BBUA-301 Financial Accounting		4	
	BBUB-430 Organizational Behavior			4
	*Liberal Arts (Electives)		8	4
	Liberal Arts (Senior Seminar)			2

*** Waiver by examination permits substitution of an elective course.*

† Upon successful completion of the second year, the Associate of Applied Science Degree is awarded.

‡See Pg. 24 tor Policy on Physical Education.

**See Pg. 102 for Liberal Arts requirements.*

*****Concentration courses**

Six courses are to be selected as concentration electives from any one of the following areas. (Substitutions may be made with the approval of the department chairperson.)

Photographic Instrumentation
Film and Television
Business
Graphic Arts
Photographic Processing and Finishing
Audiovisual Communications
Still Photography and Color Printing
Science and Engineering

Photographic Marketing Management
Offered jointly by the College of Business and the College of Graphic Arts and Photography, RITs program in photographic marketing is the only one of its type 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 the student for a multifaceted management-level career in the 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.

School of Printing

William Pakan, Director

The School of Printing at Rochester Institute of Technology is the world's largest and best equipped school for developing printing managers. It enjoys a position of leadership because of its extensive laboratory facilities, its up-to-date programs of study, its competent faculty, and its successful graduates. More than 600 students are enrolled in its bachelor's and master's degree programs.

The school has 25 laboratories with more than $25 million in up-to-date printing equipment, occupying 125,000 square feet of space. Most equipment is upgraded or replaced by manufacturers as they advance the state of the art. The school offers more than the 70 courses in printing technology and management from which students take about half their coursework. Other courses—including engineering, computer science, business, science and liberal arts—are taken in other RIT colleges.

The primary objective of the School of Printing is to prepare students—both men and women—for successful careers in printing, publishing and allied industries. While students get considerable hands-on experience with the latest equipment in many technological areas, the emphasis is on learning "why" rather than "how to." Printing school graduates have successful careers at all levels of graphic arts management is selling, supervision, design, and research, among other positions.

All of the school's programs require study in a broad range of courses but allow study in depth in particular areas of interest. All programs require students to take courses to help develop understanding and appreciation of the following areas—aesthetic qualities of good printing, procedures involved in the major important processes, principles of management, applications of science and engineering in the graphic arts and liberal arts courses as a means of developing personally as well-rounded individual and responsible citizens. To facilitate curriculum development, the faculty of the School of Printing is divided administratively into three divisions: design-composition, photography-plate-press, and management. All programs share the same faculty.

The School of Printing offers four bachelor of science degree programs and a master of science degree program. The bachelor's degree programs are described here. The master's program was developed for students who already have a bachelor's degree (not necessarily in printing) and is described in the RIT Graduate Bulletin. Some college graduates with bachelor's degrees choose to pursue a BS in printing rather than MS in printing technology admission, such students usually are given the equivalent of about two years of concentrated effort.

Scholarship and financial aid
Competitive scholarships are offered through the National Scholarship Trust Fund of the Education Council of the Graphic Arts Industry. Trust Fund of the Education Council of the

Yr.	Photographic Marketing Management	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	BBUB-202 Introduction to Business	4		
	SMAM-225 College Algebra & Matrices	4		
	GSSE-301 Principles of Economics 1	4		
	BRER-201 Introduction to the Retail Industry		4	
	SMAM-226 Business Calculus		4	
	GSSE-302 Principles of Economics II		4	
	ICSS-200 Survey of Computer Science			4
	BBUA-301 Financial Accounting			4
	BBUB-210 Career Seminar I			1
	*Liberal Arts.	4	4	8
	‡Physical Education Electives	0	0	0
2	PPHM-201, 202, 203 Basic Principles of Photography I, II, III	4	4	4
	BRER-301 Retail Merchandising and Control	4		
	BBUQ-351 Applied Statistics L	4		
	BBUA-302 Managerial Accounting	4		
	BBUQ-352 Applied Statistics II		4	
	BBUB-320 Organizational Behavior		4	
	BBUQ-334 Management Science			4
	BBUB-310 Career Seminar II			1
	*Liberal Arts.		4	8
3	PPHT-211, 212, 213 Materials & Processes of Photography	3	3	3
	BBUB-315 Legal Environment	4		
	BBUB-420 Principles of Management	4		
	BBUF-441 Corporate Finance		4	
	BBUM-463 Principles of Marketing		4	
	BRER-401 Retail Store Operations and Management			4
	BBUQ-460 Operations Management			4
	*Liberal Arts.	4	4	4
	‡Physical Education Electives	0	0	0
4	BBUB-507 Business Environment	4		
	PPHT-311 Color Photography: Design	4		
	BRER-501 Senior Seminar in Retail Management			4
	PPHT-312 Color Printing: Theory		• 4	
	PPHM-320 Mechanics of Photographic Hardware I		4	
	BBUB-551 Integrated Business Analysis			4
	PPHM-321 Mechanics of Photographic Hardware II			4
	PPHM-310 Survey of Production Processing & Finishing			2
	Photo/Retail/Business Electives	4		4
	*Liberal Arts	4	8	
	Liberal Arts (Senior Seminar)		2	

NOTE: Second- and third-year students may co-op during summer vacation.
‡See Pg. 24 lor Policy on Physical Education.
**See Pg. 102 lor Liberal Arts requirements.*

Graphic Arts Industry. Anyone interested in applying for one of these scholarships should do so early in the senior year in high school, since the application must be filed in advance of the date set for competitive examinations. If information is not available in the local high school, the candidate should write to:

Education Council of the Graphic Arts Industry
4515 Forbes Avenue
Pittsburgh, PA 15213

More than 55 scholarships are available to School of Printing students through RIT's Financial Aid Office. They range in size from $100 to full tuition. Some of these awards may be continued beyond one year depending upon the students' scholastic records. See the section on financial aid located near the front of this catalog.

The School of Printing also administers some scholarships directly. These usually are awarded to upperclassmen on the basis of previous performance at the school

Cooperative program

The cooperative program in printing is flexible and voluntary. It is available to printing students who have successfully completed the first two years of the printing program and to qualified transfer students accepted at the third-year level. The intent of the cooperative program in printing is |o afford students the opportunity of' enlarging and improving their college education by combining formal, classroom learning with practical work experiences. Printing students following the cooperative program have a wide variety of graphic arts work experiences available to them. Students in the co-op program may take up to five years to complete BS degree requirements.

Internships

A number of firms offer summer employment in selected areas to third-year students who are chosen competitively. These positions provide significant educational experience.

Course descriptions

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

Yr.	Printing Degree Program	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	PPRT-201 Typography	3		
	PPRT-202 Composition Technology	3		
	PPRT-203 Layout & Print Design I	3		
	PPRT-204 Flexography		3	
	PPRT-205 Gravure		3	
	PPRT-206 Reproduction Photography			3
	PPRT-207 Printing Plates			3
	PPRT-208 Lithographic Press			3
	PPRT-209 Screen Printing I		3	
	Mathematics Option	3-4	3	3
	*Liberal Arts (English Composition)	4		
	*Liberal Arts (Core)		4	4
	‡Physical Education Electives	0	0	0
2	PPRM-201 Intro to Technical Writing		3	
	PPRM-210 Financial Controls I		3	
	PPRM-302 Personnel Relations I			3
	PPRT-302 Composition Systems	3		
	PPRT-311 Planning & Finishing	3		
	PPRT-312 Image Assembly	3		
	PPRT-402 Appl. of Electronics to G.A			3
	Science Option (either Chemistry or Physics)	4	4	4
	*Liberal Arts (Core)	4	8	4
	‡Physical Education Electives	0	0	0
3	PPRM-301 Appl. of Computers in G.A	3		
	PPRM-401 Estimating I		4	
	PPRM-403 Printing Production Management I			3
	PPRT-410 Introduction to Paper			3
	Professional Electives	3	3	3
	Science Option	4	4	4
	*Liberal Arts (Concentration)	4	4	4
4	PPRM-590 Senior Seminar	2		
	SMAM-319 Data Analysis		4	
	Professional Electives	10	8	10
	*Liberal Arts Electives	4	4	4
	Liberal Arts (Senior Seminar & Project)			2

‡See Pg. 24 lor Policy on Physical Education.
**See Pg. 102 lor Liberal Arts' requirements.*

Printing Degree Program

Prior to September 1979 the printing program was the only bachelor of science degree program available at the School of Printing, and the school's international reputation is built on it. From its inception the program has drawn students from nearly every state in the union and from numerous Central and South American, African, Asian, and European countries.

Although the school has recently introduced special programs to meet important and specific industry needs (described on the succeeding pages of this catalog), 80 percent or more of the students in the school continue to enroll in the printing program. It offers the greatest amount of flexibility in allowing students to customize their programs for the careers they seek.

This program is based on a sound foundation in the technologies important to the printing industry and also requires courses in important management areas. It allows numerous electives from which students may choose management or technical courses according to their career goals.

The printing program's list of required courses is indicated in a boxed tabulation at the end of this section.

While each student is expected to use initiative in selecting elective courses, the three faculty divisions administer optional program sequences to guide students toward specific career objectives.

Design Composition Division

Emery E. Schneider, Staff Chairman

Most people in the graphic arts need to have an appreciation of good design and typography because much of their time is spent evaluating printing from the standpoint of design and production. Many printing firms

have organized their own design and composition facilities in order to offer a complete service to their customers and need well-qualified people in these areas. In addition, the needs of in-plant and corporate advertising departments for educated people in the creative fields and for printing buyers are extensive. For these reasons, the Design-Composition Division not only offers introductory creative and composition courses for those students who will pursue other areas of endeavor, but also offers sequences in the design and composition field in which the student may specialize. These sequences include:

Book design and book production. A sequence designed to prepare students to fill a variety of positions in the book publishing and book manufacturing industries. This flexible program can be altered to fit the specific needs of others interested in the wide range of opportunities in the publishing industry.

Design and Typography. A sequence for students with a basic interest in the aesthetics of printing. It includes a broad range of courses—calligraphy to typography, design to copy preparaare important in the creative fields tion—that of the printing industry.

Composing room procedure. A sequence giving students an overview of typesetting techniques and management. The diversity and challenges in this field are reflected in a series of courses ranging from electronics in computerized typesetting through estimating and other management areas related to the composition room.

Photography-Plate-Press Division

Walter G. Home, Staff Chairman

The production segment of the industry is the core area of most printing facilities. All managers in the industry, from design through delivery and in nonproduction 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 Photography-Plate-Press Division offers courses in all the major printing processes, encompassing camera work, image assembly, platemaking, presswork, inks, substrates, binding, finishing, and distribution. .

This division administers sequences in various production areas such as:

Lithographic technology: This sequence gives students in-depth knowledge of lithographic management. The student is prepared for positions such as technical service representative, production scheduling, quality control analysis, and technical sales.

Reproduction photography. A sequence for students who wish to specialize in the photomechanical processes in printing. The student is prepared for management positions which require an understanding of graphic arts photographic processing and color separation involving cameras and scanners.

Flexographic technology. A sequence for students who wish to enter the flexographic industry. It allows the student to use elective credits to emphasize appropriate technical course work and take advantage of many management electives.

Gravure Technology. Students who wish to specialize in the area of gravure printing may combine required and elective courses which provide a strong foundation in all of the technical aspects of this printing process. This, coupled with appropriate management courses, prepares the students for positions in management in the gravure industry.

Screen Printing Technology. This printing process receives good exposure as a result of specific technical courses, both required and elective. The student can become a technical specialist in all phases of the screen printing process and is thus prepared to accept challenging positions in management in this special part of the printing industry.

Management Division

W. Frederick Craig, Staff Chairman

To facilitate a high level decision-making process, management personnel in the graphic arts needs 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 Division offers course work in these various areas. In collaboration with other divisions, the Management Division provides the topping for shaping future managers in the graphic arts. The division offers these sequences:

Estimating. Estimating is at the heart of the successful economic well-being of the printing industry. Accurate job costing and analysis can mean the difference between success and failure for any printing concern. This sequence prepares students for positions found in every segment of the industry from commercial printing through packaging and specialized forms manufacturing.

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.

Finanical management. This sequence utilizes courses in both the School of Printing 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, the 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 representative for graphic arts supply firms and as printing buyers and brokers.

Career opportunities
The graduate with a BS degree in printing has available a wide variety of technical and management positions 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 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 extra-curricular 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 or 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. 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 the need for them exists.

The second-year science sequence must be Chemistry for Printers (SCHG-281, 282, 283) or College Physics (SPSP-211, 212, 213). However, with departmental approval students can substitute certain other college chemistry or physics sequences. The third-year science sequence can be chemistry or physics, advanced chemistry, advanced physics, calculus, computer courses, or Photography for Scientists and Engineers (PPHS-201, 202, 203).

Electives

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 art appreciation.

Professional electives
These are usually selected from the printing management and technology electives listed below, but may 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 pre-requisite 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 Workship (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)
PPRM-512 Collective Bargaining in the Graphic Arts (Cr-3)
PPRM-513 Sales in the Graphic Arts (Cr-4)
PPRM-514 Newspaper Management (Cr-4)
PPRM-515 Legal Problems of Publishing (Cr-4)
PPRM-516 Marketing in Graphic Arts (Cr-4)
PPRM-518 Purchasing in the Graphic Arts (Cr-3)
PPRM-599 Independent Study (Cr-arranged)

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 Photography (Cr-3)
PPRT-308 Litho Press Problems (Cr-4)
PPRT-309 Advanced Image Carriers (Cr-3)
PPRT-310 Advanced Image Carriers (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 (Cr-3)
PPRT-321 Web Offset (Cr-3)
PPRT-322 Circulation and Mailrooms (Cr-3)
PPRT-324 Newspaper Composition (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 Photography (Cr-3)
PPRT-500 Quality Control in the Graphic Arts (Cr-3)
PPRT-501 Development of Printing Types (Cr-3)
PPRT-506 Advanced Color Reproduction (Cr-3)
Other electives to be selected in consultation with advisors.

Printing Systems and Engineering
A program combining course work in industrial engineering and printing

Walter A. Campbell, Coordinator

The printing industry needs people who have competency in both printing and industrial engineering. They must be able to collect data on plant operation, interpret the data, and

Yr.	Printing Systems and Engineering Program	Qtr. Credit Hours FALL	WTR.	SPG.
	A program combining coursework in Industrial Engineering and printing.			
	PPRM-210 Financial Controls I		3	
	PPRM-301 Appl. of Computers in G.A.			3
	PPRM-403 Printing Production Management I	3		
	PPRT-201 Typography		3	
	PPRT-204, 205, 209 Flexography or Gravure or Screen Printing			3
	PPRT-206 Reproduction Photography	3		
1	PPRT-207 Printing Plates		3	
	PPRT-208 Lithographic Press			3
	PPRT-213 Principles of Copy Preparation	3		
	SMAM-251, 252, 253 Calculus	4	4	4
	*Liberal Arts (English Composition)	4		
	*Liberal Arts (Core)		4	4
	‡Physical Education Electives	0	0	0
	EIEI-201 Intro to Industrial Engineering	4		
	EIEI-202 Computing for Industrial Engineers		4	
	PPRM-201 Intro to Technical Writing	3		
	PPRT-311 Planning & Finishing	3		
2	SMAM-305 Calculus	4		
	SMAM-351, 352 Probability, Applied Statistics I		4	4
	SPSP-311, 312 Physics		4	4
	SPSP-375, 376 Physics Laboratories		1	1
	*Liberal Arts (Core)	4	4	8
	‡Physical Education Electives	0	0	0
	EIEI-401 Operations Research I	4		
	EIEI-415 Human Factors I			4
	EIEI-420 Work Measurement & Analysis	4		
	EIEI-422 Systems & Facilities Planning			4
	EIEI-503 Simulation			4
3	EIEI-511 Applied Statistics II			4
	PPRM-502 Financial Controls II		4	
	PPRM-590 Senior Seminar			2
	PPRT-306 Color Separation Photography		3	
	PPRT-315 Ink & Color	4		
	*Liberal Arts (Concentration)	4	8	
	EIEI-482 Production Control			4
	EIEI-550 Safety Engineering			4
	PPRM-401 Estimating I	4		
	PPRM-511 Labor Relations	4		
4	PPRT-302 Composition Systems		3	
	PPRT-308 Lithographic Press Problems	4		
	PPRT-500 Quality Control in G.A.		3	
	Professional Electives		4	
	*Liberal Arts Electives	4	4	4
	Liberal Arts (Senior Seminar & Project)	2		

‡See Pg. 24 lor Policy on Physical Education.
**See Pg. 102 lor Liberal Arts requirements.*

make appropriate operational adjustments in line with those data. At the same time, they must be up-to-date with technical changes and new developments in the printing industry.

Working with computers, methods, analysis, electronics, mechanics, and many different kinds of people are daily occurences. The program in printing systems management integrates coursework in printing technology, printing management, industrial engineering, math/science, and general education to prepare managers for the printing industry who are excellent problem solvers when analyzing printing plant operations. Most engineering courses in this program are based on computer applications.

This program's admission standards appeal to students with interests in advanced mathematics, engineering, and printing. The program emphasizes a variety of engineering courses that prepare graduate for engineer-type positions in the printing industry. At the same time, this preparation enhances the graduate for a variety of production management positions.

Career opportunities

Employing about 1.1 million people, the commercial printing industry has about 45,000 plants. Although many of these plants are quite small, about 9,000 of them would be of sufficient size to require the services of at least one graduate of the printing systems management program, and many of these firms have stressed the need for people educated in both printing and industrial engineering.

U.S. Industrial Outlook says, "The stability and growth that has existed in the commercial printing industry for more than a decade is expected to continue into the 1980s." This program is designed to complement the industry's growth by stressing management, engineering, and the sciences, along with computer and printing technology.

The graduate with a BS degree in printing systems and engineering has many career choices within the printing industry. Many find beginning positions as production assistants, assistant production managers, assistant plant engineers, computer engineering specialists, and systems analysts. These can lead to positions as production manager, director of computer technology, plant engineer, and operations manager.

Requirements for admission

General 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 both printing and industrial engineering, which can be shown by success in working on a school newspaper or yearbook, by working summers in the printing plant, or by general interest in graphic communications and engineering. High school graduation is a requirement along with the coursework in elementary algebra, plane geometry, , intermediate algebra, trigonometry, physics and chemistry. Preference is given to those who have additional work in mathematics, physics, and chemistry. Students admitted to this program must meet the full entrance requirements of the RIT College of Engineering on mathematics, physics, chemistry, and SAT scores.

Cooperative plan

Printing systems & engineering program students are encouraged to complete at least two quarters of cooperative employment. These may be completed during regular summer quarters. Students who desire more cooperative work either for more work experience or for the purpose of earning money may elect it in the same quartere-as the corresponding classes in the industrial engineering programs.

From cooperative employment students obtain practical work experience using what they are learning in school and study some materials related to the work they are doing. This experience should help the student develop greater insight into a 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. While RIT and the College of Graphic Arts and Photography cannot guarantee anyone cooperative employment, RITs Center for Cooperative Education and Career Services is available to assist students in their job search efforts.

Yr.	Newspaper Production Management Program	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	0910-302 Personnel Relations I	3		
	0910-310 Industrial Organization & Mgmt			3
	0911-202 Composition Technology	3		
	0911-206 Reproduction Photography	3		
	0911-207 Printing Plates		3	
	0911-208 Lithographic Press		3	
	0911-302 Composition Systems		3	
	0911-319 Newspaper Design			3
	0911-320 Newspaper Production I			3
	Mathematics Option	3 or 4	3	3
	*Liberal Arts—English Composition	4		
	*Liberal Arts (Core)		4	4
	‡Physical Education Electives	0	0	0
2	0910-201 Intro to Technical Writing		3	
	0910-210 Financial Controls I			3
	0910-301 Appl. of Computers to G.A	3		
	0911-306 Tone Reproduction	3		
	0911-322 Circulation & Mailroom			3
	0911-330 Newspaper Production II		3	
	0911-402 Appl. of Electronics to G.A		3	
	Science Requirement (Chemistry for Printers)	4	4	4
	Professional Elective			3
	*Liberal Arts (Core)	8	4	4
	‡Physical Education Electives	0	0	0
3	0910-509 Economics of Prod. Management	4		
	0910-514 Newspaper Management		4	
	0910-420 Electronic Communication Prt/Publ	4		
	0911-210 Newspaper Presses		3	
	0911-323 Newspaper Color			3
	Professional Elective			3
	Science Option	4	4	4
	*Liberal Arts (Concentration)	4	4	4
4	0910-522 Labor Relations in G.A	4		
	0910-515 Legal Problems in Publishing			4
	0910-520 Systems Planning			4
	1016-319 Data Analysis		4	
	Professional Electives	8	8	4
	*Liberal Arts Electives	4	4	4
	*Liberal Arts (Senior Seminar & Project)			2

‡See Pg. 24 lor Policy on Physical Education.
**See Pg. 102 for Liberal Arts requirements.*

Program of Study
The School of Printing offers a four-year course of study leading to a bachelor of science degree in printing systems and engineering. The program includes a total of 196 quarter credits. Of these there are 35 credits in printing technology, 29 credits in printing management, 40 credits in industrial engineering, 32 credits in math/science, 54 credits in general studies, and six elective credits. The first-year curriculum of this program and that of the printing and applied computer science program are practically the same. Therefore, a student may transfer between the program at that time with no loss of credit.

Professional Electives
Students may elect professional courses in printing or industrial engineering to complete their course requirements.

Liberal arts electives
In general, the program requires that the student take at least one course per quarter from this area, which includes subjects as economics, psychology, logic, ethics, language communications, literature, and fine arts appreciation.

Newspaper Production Management

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 shall 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 and publisher. All 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 coursework aimed at the newspaper industry, rather than the printing industry, in general.

Program of study
The School of Printing 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 7 and 8 percent per year to the mid-80's."

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. Nine or ten 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 Chemistry for Printers (ACHG-281, 282, 283). 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.

Electives

Liberal arts electives
In general, the program requires that the student take at least one course per quarter 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 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
ICSP-215 Programming Language—FORTRAN
PPRT-323 Newspaper Color
PPRT-324 Newspaper Composition
PPRM-702 Computers in Management

Printing and Applied Computer Science

William H. Birkett, 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 in the graphic arts have created a need for personnel with an in-depth knowledge of both printing and computer science. Recognizing this need, RITs School of Printing, in cooperation with the School of Computer Science and Technology, 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 possibilities open to them. These include systems analysis, production control, engineering liaison, customer training, marketing support, purchasing, process engineering and production design, as well as general staff positions. These positions can lead to management responsibilities as production manager, director of computer technology and operations manager. These are all stepping stones to higher management positions.

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 in 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 offers a four-year course leading to a bachelor of science degree in printing and applied computer science.

Approximately 20 percent of the coursework is in computer science, 30 percent in printing technology and management, 25 percent in math/science, and 25 percent in general studies.

A survey of employers in the graphic arts industry indicates the strong need for trained printing/computer specialists. As more and more graphic arts 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 available in the School of Printing 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 the fine arts appreciation.

Yr.	Printing and Applied Computer Science Program	Qtr. Credit Hour*		
		FALL	WTR.	SPG.
1	PPRM-210 Financial Controls I	3		
	PPRM-301 Appl. Computers in G.A			3
	PPRT-201 Typography		3	
	PPRT-204 or -205 or -209 Flexography or Gravure or Screen Printing I		3	
	PPRT-206 Reproduction Photography		3	
	PPRT-207 Printing Plates			3
	PPRT-208 Lithographic Press	3		
	PPRT-213 Principles of Copy Preparation	3		
	PPRT-302 Composition Systems			3
	SMAM-251, 252, 253 Calculus	4	4	4
	*Liberal Arts (English Composition)	4		
	*Liberal Arts (Core)		4	4
	‡Physical Education Electives	0	0	0
2	ICSP-241 Programming 1—Algorithmic Structures	4		
	ICSP-242 Programming II Data Structures		4	
	ICSP-243 Programming III Design and Implementation			4
	PPRM-201 Intro, to Technical Writing	3		
	PPRM-403 Printing Production Management I		3	
	PPRT-311 Planning and Finishing			3
	SMAM-305 Calculus	4		
	SPSP-311, 312 University Physics		5	5
	*Liberal Arts (Core)	6	6	4
	‡Physical Education Electives	0	0	0
3	ICSP-305 Assembly Language & Programming	4		
	ICSS-315 Digital Computer Organization	4	4	
	ICSS-325 Data Organization & Management		4	
	ICSS-420 Data Communication Systems			4
	PPRM-302 Personnel Relations			3
	PPRT-315 Ink and Color			4
	PPRT-500 Quality Control in G.A	3		
	SMAM-351, 352 Probability & Applied Stat. 1	4	4	
	*Liberal Arts (Concentration)	4	4	4
4	†ICSS-521 Microprocessors and Microcomputers	4		
	†ICSS-565 Computer Systems Selection		4	
	†ICSS-570 Intro, to Computer Graphics			4
	PPRM-401 Estimating I	4		
	PPRM-590 Senior Seminar	2		
	†PPRT-308 Lithographic Press Problems		4	
	†PPRT-406 Color Separation Photography	3		
	Professional Electives		4	8
	*Liberal Arts Electives	4	4	4
	Liberal Arts (Senior Seminar & Project)			2

†Other approved upper level courses may be substituted giving depth rather than breadth, to meet Individual needs, with approval ol the program curriculum management team.

‡See Pg. 24 lor Policy on Physical Education.

**See Pg. 102 lor Liberal Arts requirements.*

College of Liberal Arts

Liberal Education In the Humanities And Social Sciences

Dr. Mary C. Sullivan, R.S.M., Dean

The College of Liberal Arts provides each student with a program of liberal education which develops his or her potential as an intellectually aware and responsible human being. It is, therefore, the foundation for the student's entire educational experience. As part of that broader experience which may be called the student's general education, this program of liberal education is distinguishable from the student's professional education in that its purpose is to nurture not specifically professional knowledge or skill, but each student's capabilities as a thinking, creating, and responsible person. Thereby enriched, RIT students will be all the better prepared for their professions and their lives, for they will be able to understand and interpret the problems, as well as the personal and social illuminations, found in the study of the many varied fields of human endeavor.

The program of the College of Liberal Arts, in which all RIT students participate, aims to accomplish the following goals with and on behalf of each RIT student:

— 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 their 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;
— To promote the student's understanding 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 study. 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 degree programs in criminal justice, social work, and economics which are described later in this bulletin. The close involvement of these with the humanistic studies of the other Liberal Arts divisions is an example of what the college is endeavoring to do throughout its curriculum, that is, to demonstrate the interrelation of all fields of learning.

The New Liberal Arts Curriculum

The new curriculum of study in the humanities and social sciences which all RIT students will 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 will complete this entire Liberal Arts curriculum or a modification of it, as applicable to their particular degree programs. Faculty academic advisors in the College of Liberal Arts and in other colleges of the Institute will assist students in interpreting the Liberal Arts curriculum as it applies to their particular degree program. The new Liberal Arts curriculum as outlined here was approved in March 1981 and was implemented for all RIT students beginning in September 1982. 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 interdisciplinary concentration of three advanced courses (400 course numbers);
4. Three advanced electives (400 & 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: one 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

Social Sciences: two required
- Introduction to Economics
- American Politics, or
- Ideology and the Political Process
- Introduction to Psychology
- General Sociology, or
- Cultural Anthropology

Concentrations

A concentration is a group of closely related advanced courses from which the students choose three. The students' 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 to 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 Concentrations:
   a. three interdisciplinary courses on a single broad theme or topic;
   b. three related courses from different disciplines each one of which speaks to some aspect of a common area, subject, or topic;
   c. a mixture of a. and b.

A concentration is composed of three courses chosen from the four to six 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 six 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: Human Growth and Development
Sociology: American Society in Transition

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 six 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

in the future additional Interdisciplinary Concentrations will be available.

Electives
The opportunity to choose three elective courses provides students with an element of choice in planning their Liberal Arts program. Electives may be chosen from among core courses not previously taken, or concentration courses for which the student has the proper prerequisites, as well as from among those courses designated "elective."

Senior Seminar and Project
The purposes of the Senior Seminar and Project are the following:

- to give senior students the opportunity to prepare these 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 by the dean and the staff chair-persons. The main focus of the Senior Seminar will be the formulation and direction of the senior theses or projects. In support of this the Seminar Committee may plan in advance a general theme for each academic year, and may choose related common texts to be read by the students in the Seminar; major lectures on topics related to the theme may also be scheduled.

The course will last one quarter and can be taken anytime in the senior year.

Selected faculty of the various colleges of the Institute may be invited to participate as consultants in the seminars.

Implementation of the New Liberal Arts Curriculum

Fall 1982: Implementation of the entire curriculum except the Senior Seminar and Project.
Fall 1983: Implementation of the Senior Seminar and Project.

This implementation applies to entering students (freshmen and transfers) as follows:
Students entering in:

Fall 1980:(Graduating Class of 1984*)
These students will be required to take the former ("old") Liberal Arts lower division** courses and the new advanced Liberal Arts curriculum as it applies to their degree program:
3 concentration courses
3 electives
Senior Seminar and Project

Fall 1981:(Graduating Class of 1985*)
Same requirements as Fall 1980.
These students are of course free and encouraged to choose Liberal Arts lower division courses in the light of the new curriculum as applicable to their degree programs and as needed for the concentration of advanced courses they may later wish to pursue.

Fall 1982, **Fall** 1983, **and Fall** 1984:
(Graduating Class of 1986,1987 and 1988*)
The entire new Liberal Arts curriculum will apply to these students, as this curriculum is applicable to their degree programs.

'or the following year for students in five-year programs, "described in the 19BOS1 Bulletin.

Academic Advising

Liberal arts requirements will 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.

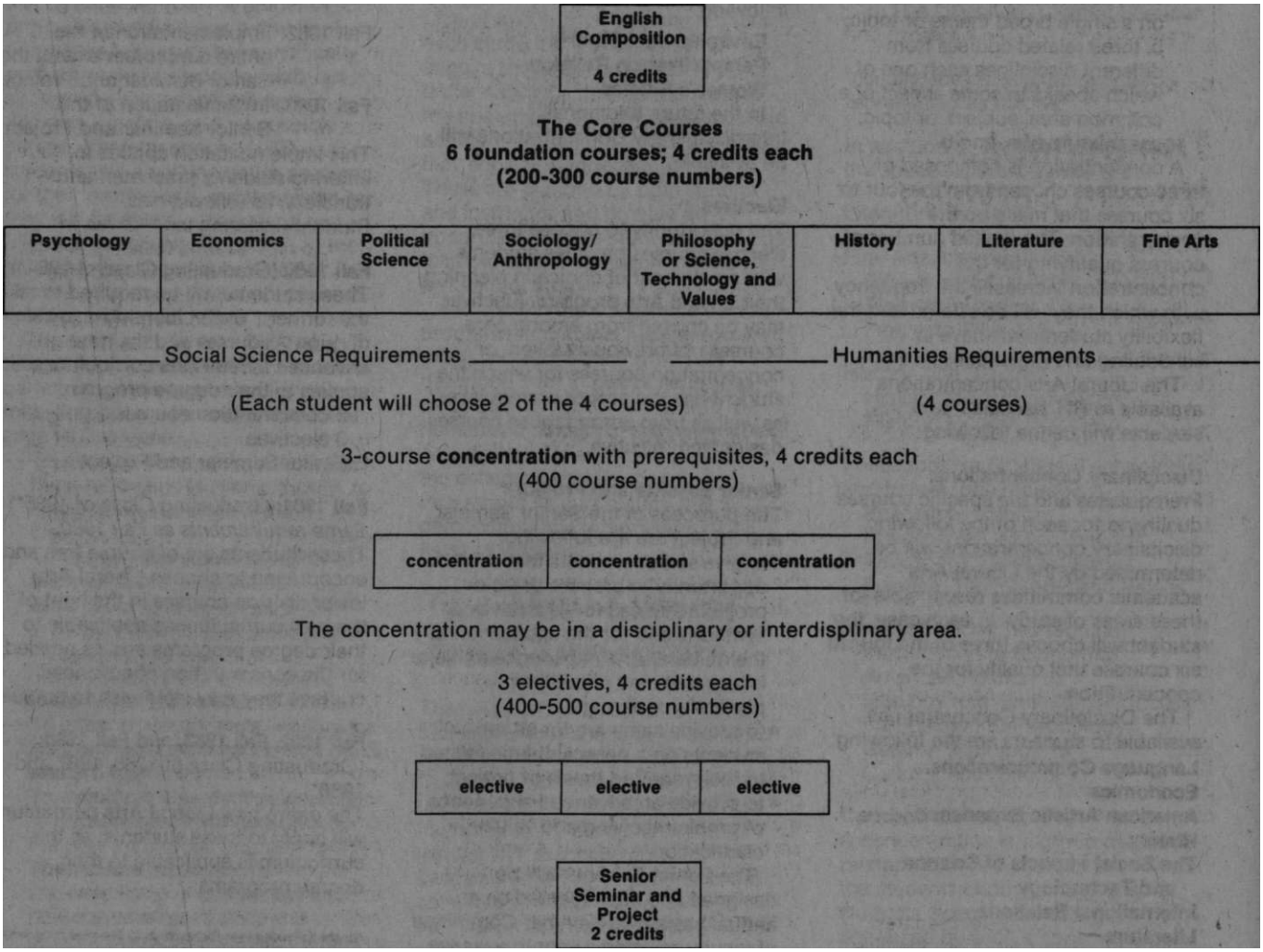
The college also provides a course description handbook with general information about the college and specific information regarding all liberal arts courses. Academic worksheets developed for each specific degree program are also available to help in maintaining records. The handbook and worksheets are available in the Office of Academic Advising.

Additionally, those students who are enrolled in liberal arts degree programs will be assigned faculty advisors through their specific departments. These advisors will counsel students in their degree requirements, answer specific questions regarding field placement, and provide career counseling. Students enrolled in the School of Human Services degree programs are *required* to seek faculty advisement on a quarterly basis. Students arrange appointments with their faculty advisors' regularly scheduled office hours.

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. (Degree programs in social work and criminal justice are available to students through the School of Human Services in the College of Liberal Arts. The degree program in economics is available through the College of Liberal Arts, and is described on the page following social work and criminal justice programs.)

The Liberal Arts Curriculum



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 discrepancy 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 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.

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 the student and continuing growth in their scholarly fields.

Summer Session
Under the auspices of the Institute Summer Session, the College of Liberal Arts offers a number of courses each summer in Language and Literature, Science and Humanities, and Social Science.

Information concerning summer courses to be offered can be obtained by contacting the director, Summer Session, or by requesting the Summer Bulletin from the College of Continuing Education or

RIT Office of Admissions
One Lomb Memorial Drive
P.O. Box 9887
Rochester, New York 14623

College of Liberal Arts: Human Service Degree Programs

General Information on RIT« admission requirements, procedures and services Is Included In detail on pages 14-15 of this Bulletin.

Dr. Mary C. Sullivan, R.S.M. Dean

The School of Human Services

Social Work
Criminal Justice

Arnold J. Berman, Director

The School of Human Services in the College of Liberal Arts offers two programs leading to the B.S. degree. They are Criminal Justice and Social Work.

Criminal Justice-
The Criminal Justice program is designed to prepare students for responsible positions in criminal justice and the security sector, as well as to provide continuing education for those professionals already employed in a variety of criminal justice agencies. The generic nature of the curriculum also provides individual career specialization and, through a field placement program, offers unique opportunities for practical on-the-job learning experiences. Degree granted: BS 4-year.

Social Work-
The Social Work program prepares students to assist individuals, families, groups, and communities in the identification and solution of problems, with an awareness of social issues and services. A full-time, 20-week field instruction placement in a social work agency provides the students with an opportunity to relate academic learning to professional practice through relevant individual, group, family, and community experiences. Degree granted: BS 4-year.

Criminal Justice Program and Career Opportunities

The bachelor of science degree program in criminal justice is designed to prepare students for entrance into the many careers within the criminal justice system and the public and private security sectors, as well as to provide continuing education for men and women already pursuing professional criminal justice or security careers.

The curriculum is structured in such a way as to provide the student with the basic skills of all facets of the criminal justice system. Areas of study include law, law enforcement, courts, corrections, as well as the examination of the issues of crime prevention and resocialization. Through the required professional courses, the opportunity for a thorough understanding of the broad field of criminal justice is provided for the student. Through the professional electives, the student has the opportunity to focus on a particular area within the criminal justice field or the security area, as well as to acquire advanced auxiliary skills now needed in these professional areas.

It should be emphasized that in both the professional courses and the liberal education courses, students will be stimulated to develop their capacities for sound judgment and their decision-making skills. Through careful academic guidance, they will be encouraged to design a well-balanced program of study leading to professional competencies as well as to breadth in personal development.

A particularly important aspect of the program is the supervised field education placement, a supervised internship in the criminal justice system.

These specific goals are undergirded by a program that pursues the following objectives:

1. To broaden the social, cultural and political perspectives of students.
2. To develop an interdisciplinary and cross-cultural perspective of the area of criminal justice, with special emphasis upon the humanistic perspective.
3. To prepare personnel with broad educational experience in a work setting as well as to develop specific skills through the field work experience.

Freshman Admission Requirements **Transfer Admission with junior standing**

Program	Required High School Subjects*	Desirable Elective Subjects	Two-Year College Programs	Desirable Minimum GPA
Social Work **Criminal Justice**	English 4 years Mathematics 1 Year Any Science 1 year	Social Sciences Humanities, e.g. History Government Economics	Junior standing is offered for an associate's degree in human services, criminal justice or in another appropriate major. Holders of liberal arts or other two-year degrees are also 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 coursework elsewhere.	2.0

Freshman Admission Requirements **Transfer Admission with junior standing**

Program	Required High School Subjects*	Desirable Elective Subjects		Desirable Minimum GPA
Economics	English 4 years Elem. Algebra Plane Geometry Inter. Algebra	Additional Mathematics Science courses Social Science and History Courses	Holders of Liberal Arts degrees with appropriate coursework in economics, mathematics, and computer science are admitted to the program, and transfer credit is given to the fullest extent possible.	2.5

4. To inquire into the specific areas of juvenile delinquency, white collar crime, political crime, discretionary arrest, loss prevention security, corporate crime, the problem of a dual system of justice, crime without victims, new and innovative programs of rehabilitation and crime control, and majority-minority relations.

Career Opportunities
Career opportunities in the field of criminal justice are many. The *Occupational Outlook Handbook* prepared by the Bureau of Labor Statistics indicates a projected need for substantial numbers of new employees in the criminal justice system. Criminal justice is a rapidly changing and expanding field. Students who graduate from the program will find career opportunities in police work, courts, prisons, probation departments, parole, halfway houses, community treatment centers, customs, narcotics control, drug treatment, data processing, youth service programs, counseling, crime control planning and research.

Further, the program offers a concentration in security. The *Task Force Report on Private Security* of the National Advisory Commission on Criminal Justice Standards and Goals projects nearly two million private security positions in the United States and a growth rate of over 100 thousand new positions a year.

Curriculum
The curriculum is designed to prepare students for entrance into both the criminal justice system and the security sector, and to provide continuing education for those already pursuing careers in these areas. If a student hopes to enter graduate school in the future, this program also serves as an excellent foundation for further study in criminal justice, security, law, public administration, human services, criminology and sociology.

Through required professional courses, students gain a thorough understanding of the criminal justice field. Elective courses will enable them to specialize in particular areas within the field. Concentrations in the form of courses in business, social work, photography and computer science, also are available as part of the program. Students receive careful academic guidance in designing a well-balanced program of study leading to professional competence and breadth in personal development.

Field Placement
During the senior year, students spend 10 weeks working in one of a variety of agencies in criminal justice or security. This internship gives them the chance to witness and participate in the activities of an established agency. This field experience allows students to experience directly the realities of working within the system. Some of the traditional agencies in which students are placed during the internship include state and local law enforcement, probation and parole offices, state and local correctional institutions, halfway houses, adult and juvenile counseling programs, public defender's or district attorney's offices, and retail and corporate security agencies.

Faculty
The criminal justice faculty are highly qualified individuals with advanced degrees and extensive practical experience in criminal justice and related areas. Among the full-time faculty are experts in law enforcement, institutional corrections, probation and parole, criminal law, civil law, security, and research. Thus, the criminal justice faculty are a source of guidance as well as instruction. They assist students in their specific interest in criminal justice and provide advice on career planning.

The criminal justice program allows students the chance to participate in independent study for academic credit, if they are doing well in their regular studies. Such independent study helps build confidence and develop initiative. Projects may vary from one quarter credit hour to 8 quarter credit hours.

Student body
The criminal justice student body is composed of men and women from the several regions of New York State and from a number of areas in the northeast, midwest, and central atlantic states. Approximately 100 students are matriculated in the program.

Principal Held of study
For students matriculated in the Criminal Justice Program, the principal field of study includes all courses offered by the Criminal Justice Program and/or the equivalent CCE courses. 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.

Professional elective options
The following list of professional electives is illustrative of those offered periodically within the Criminal Justice Program. These courses are each listed under only one general heading, even though many are appropriate for students with diverse career objectives.

A student selects professional elective courses with the advice of his/her faculty advisor.

One of the strengths of the criminal justice program is that students may elect to take up to fifty percent of their professional electives from other designated colleges in the Institute, thus enabling them to develop an additional concentration in a related professional area applicable to their career goal.

Yr.	Bachelor of Science in Criminal Justice	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	GCJC-201 Fundamentals of the Criminal Justice System	4		
	3 Liberal Arts courses	12		
	GCJC-203 Criminology		4	
	3 Liberal Arts course		12	
	GCJC-303 Law Enforcement in Society			4
	GCJC-301 Fundamental Concepts of Criminal Law			4
	1 Mathematics course (e.g. College Algebra)			4
	1 Liberal Arts course			4
	Physical Education	0	0	0
2	GSSM-523 Judicial Process		4	
	GCJC-207 Corrections	4		
	*1 Computer Science course (ICSS-200 or ICSS-202)	4		
	1 Mathematics course	4		
	GCJC-309 Juvenile Justice		4	
	1 Liberal Arts course	4		
	2 Science courses		4	4
	1 Liberal Arts course		4	
	GCJC-204 Introduction to Public Administration			4
	1 Open Elective			4
	**1 Professional Elective			4
	Physical Education	0	0	0
3	GCJC-526 Seminar in Law Enforcement	4		
	GCJC-528 Etiology of Crime	4		
	2 Liberal Arts courses	8		
	GCJC-411 Seminar in Corrections		4	
	2 Liberal Arts courses		8	
	**1 Professional Elective		4	
	GCJC-401 Scientific Methodology			4
	1 Liberal Arts course			4
	**2 Professional Electives			8
4	GCJC-403, 404 Field Experience and Seminar	8		
	GCJC-541 Field Research	4		
	1 Liberal Arts course		4	
	Liberal Arts: Senior Seminar		2	
	*1 Liberal Arts/Math/Science/Computer Science course		4	
	**2 Professional Electives		8	
	GCJC-514 Planning & Change			4
	1 Open Elective			4
	**2 Professional Electives			8

*Selection from Liberal Arts, Natural Science, Mathematics, or Computer Science
**Selection for a cognate concentration may be made for 50% of the Professional Electives in the areas of Liberal Arts, College of Business, College of Graphic Arts and Photography, Social Work, Computer Science.

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
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
Advanced Criminal Law
Legal Aspects of Security

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
Institutional Security
Physical Security and Safety
Retail Security
Emergency and Disaster Planning
Security Management
Legal Aspects of Security
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 career-relevant courses offered in the following colleges:

College of Business
College of Graphic Arts and Photography
College of Liberal Arts-Social Work
College of Applied Science and Technology—School of Computer Science and Technology

Students in the Criminal Justice program may develop special concentrations in:
Accounting
Computer Science

Management
Photography
Social Work or its related concentrations

Social Work Program Offered In Response to Community Need

Since its inception in 1829, Rochester Institute of Technology has had a long tradition of community service. Its program in social work is a response to the needs of communities and is viewed as a continuing step in RITs community commitment.

The Social Work Program is conceived as a broad generic major to prepare baccalaureate-level social workers and is designed to respond to the trend in the profession toward a wider variety of social work practice roles. This trend has received wide support among social work employers, and the National Association of Social Workers and the Council on Social Work Education officially support baccalaureate professional curricula in social work. The bachelor of science degree program is a qualification for initial entry into the field of social work, and may also prepare students who wish to continue their professional education on the graduate level.

Yr.	Bachelor of Science in Social Work	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	GSWS-210 The Professional Social Work Role	4		
	GSWS-302 Social Welfare: History		4	
	GSWS-211 Social Welfare: Structure & Function			4
	GSWS-215 The Family from a Social Work Perspective			4
	GSSP-203 Psychology of Childhood & Adolescence		4	
	Economics Requirement		4	
	GSHH-547 History of Social Discrimination			4
	SMAM-204 College Algebra		4	
	Four Liberal Arts Core Courses	12		4
	Physical Education	0	0	0
2	GSSS-527 Black Culture	4		
	GSSS-526 Hispanic Culture		4	
	GSWS-315 Assessing Community Needs	4		
	GSWS-411 Interviewing and the Helping Relationship (Methods I)			4
	GSWS-356 Group Theory in Social Work			4
	One Professional Elective		4	
	Biology Requirement (2 courses)		'4.	4
	Statistics	4		
	Three Liberal Arts Core Courses	4	4	4
	Physical Education	0	0	0
3	#GSWS-421 Field Placement I	5		
	#GSWS-422 Field Placement II		5	
	GSWS-433 The Supervisory Process (Seminar)	4		
	GSWS-434 Managing Community Services (Seminar)		4	
	GSWS-412 Assessment and Problem Solving (Methods II)	4		.
	GSWS-413 Intervention Strategies (Methods III)		4	
	One Professional Elective			4
	ICSS-200 Survey of Computer Science (or ICSS-202)			4
	Two Liberal Arts Electives			8
4	GSWS-534 Research Methods	4		
	GSWS-535 Senior Research		4	
	GSWS-532 Professional Issues		4	
	GSWS-533 Social Welfare Policy and Planning			4
	Four Professional Electives	4	4	8
	Four Liberal Arts Electives	8	4	4
	Liberal Arts Senior Seminar	2		

#Full-time Held instruction in social work agency.
†Includes Liberal Arts "concentration" of three courses.
Note: Transfer credit may be given, when appropriate, for any courses with the exception ol the methods sequence IGSWS-411, 412, 413). Field Instruction I and IIIGSWS-421, 422), held seminars (GSWS-433. 434), Social Welfare Policy and Planning (GSWS-S33), Professional Issues (GSWS-S32), and Senior Research (GSWS-535).

Accreditation
The bachelor of science degree program in social work is accredited by the Council on Social Work Education.

Career Opportunities
Because the curriculum leading to the BS in social work contains a variety of social science offerings, the student will be able to choose a broad spectrum of career goals in addition to the possibility of a variety of graduate programs related to the helping services.

Graduates of the RIT social work program are employed in agencies providing the services to the following types of clientele: children, families, teenagers, the elderly, the hearing impaired, alcohol and drug abusers, delinquents, single parents, those on probation and parole, those in family court situations, people with emotional problems, mentally retarded people and disabled persons.

Employment is also available in agencies that provide such special services as community planning and intervention, municipal planning, rural social services, hospital social services, corrections, school social work, day care, legal services, and human service education.

Principal field of study
For students matriculated in the Social Work program, the principal field of study is defined to be: (1) required social work courses (including field placement); (2) professional electives; and (3) required service courses offered through the College of Liberal Arts, College of Business, College of Science, and College of Applied 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 or suspension according to Institute policy.

Curriculum
The curriculum leading to the baccalaureate degree in social work rests on the following general areas of content. Most students entering RIT with two years of previous undergraduate study can complete the Social Work program in seven academic quarters (two academic years).

1. Foundation Courses
Taken within first two years, foundation courses define the role of the professional social worker, explore the history of the social welfare system, basic theory and knowledge about families, groups and communities, and examine the structure and the functions of the system of social services.

2. Skills Courses
These include a series of three Methods courses offered before and concurrently with field instruction

designed to provide students with basic generic interventive techniques and strategies fundamental to professional practice with individuals, groups, families and the community. Emphasis is placed on the development of interventive skills and on the differential use of common principles in a diversity of situations requiring social work intervention.

3. Field observation, volunteer opportunities, and field Instruction
A continuous range of experiential learning opportunities is provided throughout the curriculum.

Observation and volunteer work in a social, governmental, or educational institution is encouraged in the first and second years.

A unique feature of RIT's social work program is its 600 hours of full-time agency field instruction, which usually occurs in the third year. Students must meet specific knowledge, attitudinal and skill criteria as set forth in the Field Placement Policy before advancing to a field placement (see the Social Work Program Student Handbook for a full statement of this policy).

Further "hands-on" opportunities for field experience may be available in the fourth year in connection with the Senior Research course. The Independent Study option also may be used to extend experience in the field. All work in thife area will be under supervision of RIT faculty.

4. Minority Content
Course content on minority populations is an essential and required part of the social work curriculum. The content is provided in a sequence of three courses that address the history of social discrimination, black culture, and hispanic culture, and is also integrated into all other social work courses. In addition, Spanish language courses, manual language courses and a course in sexism are available.

5. Social policy and the profession of social work
This area includes material on social welfare, sources of social conflict, policy development, the involvement of government in social welfare, voluntary social welfare services, decision making, economic factors affecting poverty, employment levels, guaranteed annual income, personal social services, and the democratic-humanitarian values of our society as these may emerge in social welfare practice.

Yr.	BS degree in Social Work Transfer Curriculum for Students with an Associate Degree	Quarter Credit Hours			
		FALL	WTR.	SPG.	SMR.
	GSWS-210 The Professional Social Work Role	4			
	GSWS-215 The Family From a Social Work Perspective ...	4			
	GSWS-302 Social Welfare: History	4			
	GSWS-315 Assessing Community Needs		4		
	GSWS-356 Group Theory in Social Work		4		
	GSWS-411 Interviewing and the Helping Relationship			4	
3	GWSW-211 Social Welfare: Structure and Function			4	
	GSWS-412 Assessment and Problem Solving (Methods II) .				4
	##GSWS-421 Field Instruction I				5
	GSWS-433 The Supervisory Process (Seminar)				4
	Two Professional Electives		4	4	
	*Two Liberal Arts Electives	4	4		
	*Liberal Arts (Concentration)			4	
	‡Physical Education	0	0	0	
	GSWS-413 Intervention Strategies (Methods III)	4			
	GSWS-422 Field Instruction II	5			
	GSWS-434 Managing Community Services (Seminar)	4			
	GSWS-534 Research Methods		4.		
	GSWS-533 Social Welfare: Policy and Planning		4		
4	GSWS-535 Senior Research			4	
	GSWS-532 Professional Issues			4	
	Two Professional Electives		4	4	
	*One Liberal Arts Elective	4			
	*Liberal Arts (Concentration)		4	4	
	*Liberal Arts (Senior Seminar)			2	

**Transfer students holding an appropriate two year degree (e.g., an Associate Degree in Human Services) will be admitted to the Transfer Curriculum. It is recommended that such students prepare themselves by successfully completing equivalent courses in the following areas during their first two years of college: Introduction to Psychology, Introduction to Sociology, Introduction to Economics, English Composition, Developmental Psychology, Science, Math, Minority Cultures or Spanish language.*
##Full-time field placement in social work agency.
‡See Pg. 24 tor Policy on Physical Education.
** See Pg. 102 for Liberal Arts requirements.*

Note: Transfer for credit may be given, when appropriate, lor any courses with the exception of the methods sequence (GSWS-411, 412, 413). Field Instruction I and II (GSWS-421, 422), Held seminars (GSWS-433. 434). Social Welfare: Policy and Planning (GSWS-533), Professional Issues (GSWS-S32- and Senior Research (GSWS-535).

In addition, content on the characteristics and attributes of social work as a profession will be closely examined. The varying roles of the social worker including his or her relationship to clients and agencies will be studied, as well as the various philosophical and ethical bases of action, the motivation required for effective delivery of service, career opportunities, organizational settings, group identification and such issues as bureaucracy versus individualism.

6. Human behavior and the social environment
A broad spectrum of courses is offered in the social sciences and humanities.

Liberal education opportunities assist students in their intellectual, aesthetic, and social development, stimulate their curiosity, and sharpen their ability to engage in independent inquiry. Course work in human behavior is designed to help students become aware of alternate approaches to human problems, and to see their role in a wider philosophical and historical perspective.

These courses promote a greater awareness of psychological, social, political, and economic issues so that the student's professional training in social work is supported by a solid foundation of knowledge and theory. In addition, these academic opportunities will help students to develop those techniques indespensable to good written and oral communication and to a vigorous intellectual independence.

7. Management-related courses
Within the profession of social work, issues of agency and service management have consistently and increasingly been emphasized. Management knowledge and skill have become essential ingredients of professional competence. This special emphasis in the curriculum assures social work students of proficiencies directly pertinent to the needs of modern agencies and, consequently, to employment possibilities.

8. Research
The Research sequence in the curriculum provides students with an understanding of basic research

methods, an optional course in statistics (recommended for students planning on graduate study), an introduction to computer science, and "hands-on" experience in designing and carrying out a research project.

9. Professional electives and Concentrations

Professional electives are courses of choice based on the student's announced career goals, and therefore are different for each studeht. The Social Work Program and other programs at RIT offer a wide variety of course opportunities for the student to explore and develop social work skills in specific social issue areas. Electives include:

- Self-Awareness in the Helping Role
- Gerontology
- Drug Abuse
- Sexism and Sexual Identity in Social Work Practice
- The Social Worker as Advocate
- Alcoholism Disability: Physiology and Psychology
- Alcoholism: Interventive Skills and Techniques
- Alcoholism: Rehabilitation Modalities and Community Resources
- Rural Social Services
- Fundamentals of Deafness
- Psychosocial Implications of Deafness
- Intervention Strategies with the Deaf
- Mental Health and Mental Illness from a Social Work Perspective
- Social Work with the Disabled
- Child Protective Services
- Social Work and the Law
- Social Work Management
- Supervision in Social Work
- Contemporary Issues in Social Work
- Services for Children and Their Families
- Advanced Intervention with Individuals
- Advanced Intervention with Families
- Advanced Intervention in Communities
- Advanced Intervention with Groups
- Grantwriting

Students desiring to focus their professional electives in a specific area of study may develop a professional concentration. Basically, a concentration is a sequence of at least three professional elective courses, offered within the Social Work Program or in other programs focused on a single unified field of service. Professional concentrations include:

- Families and Children
- Deafness
- Gerontology
- Alcoholism and Substance Abuse
- The Legal System (Criminal Justice)
- Management
- Computer Science
- Advanced Field Placement

Course Descriptions

For a description of course content and sequencing, please request the *Courses* catalog from the Admissions Office.

The Technical and Liberal Studies Option

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 freshman 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. For more information on this option, refer to the College of Liberal Arts section further in this bulletin.

In addition to sampling introductory and foundation courses in one or more of RITs 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 an engineer, 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 engineering 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 preliminary 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 and by an associate dean of the College of Liberal Arts. The dean of the college also will work directly with each 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 matirculating in the curriculum of the student's choice at RIT, provided that relevant standards and requirements are met and that space in that program is available.

By special permission a student may enroll for portions of this program on a part-time basis.

BS In Economics Program

The BS in economics degree program* addresses the need for graduates who are well versed in economic analysis and at the same time have several identifiable skills. A graduate possessing these skills and abilities will be exceptionally well suited for employment positions involving quantitative economic analysis.

Curriculum
Students will take courses in economics which are specifically designed to develop the ability to apply economic analysis to real world problems. In addition, the economics program requires the student to take courses that develop specific skills, including oral and written communication skills, computer literacy, application of quantitative methods, multi-disciplinary reasoning, and knowledge of the business environment. A graduate of the program will possess the ability to integrate these skills and engage in all aspects of problem solving from initial conceptualization of an analytical framework to communicating the quantitative results of the investigation.

The program involves students in hands-on, experiential learning. In the advanced economics courses, students must draw upon training from previous courses and apply this knowledge to case studies taken from real-life situations involving economic analysis. The BS in economics program also allows for a faculty supervised internship, which permits students to work in positions requiring their applied economic expertise.

Yr.	Bachelor of Science in Economics	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	GSSE-301, 302 Principles of Economics 1, II	4	4	
	SMAM-225, 226 Algebra and Calculus for Management Science, OR			
	SMAM-204, 214 College Algebra & Trigonometry and Introduction to Calculus I	4	4	
	BBUA-301, 302 Financial and Managerial Accounting		4	4
	Science Requirement		4	4
	*Liberal Arts (Core)	8		8
	‡Physical Education	0		
2	GSSE-303 Principles of Economics III	4		
	GSSE-523 Monetary Analysis and Policy		4	
	BBUF-441 Corporate Finance			4
	ICSS-200 Survey of Computer Science	4		
	ICSP-208 Introduction to Programming		4	
	ICSP-210 Program Design and Validation			4
	BBUQ-351, 352 Applied Statistics I, II	4	4	
	GLLC-440 Human Communication			4
	*Liberal Arts (Core)	4	4	4
	‡Physical Education	0		
3	GSSE-520 Intermediate Price Theory	4		
	GSSE-521 Intermediate Macroeconomic Theory		4	
	GSSE-526 Research Methods for Economics			4
	GSSP-501 Industrial Psychology			4
	GSSS-443 Work and Society		4	
	BBUQ-334 Management Science	4		
	Professional Electives	4	4	4
	*Liberal Arts (Concentration)	4	4	4
4	GLLC-558 Technical Writing	4		
	GSSE-524 Industrial Organization		4	
	GSHN-444 Social Consequences of Technology OR			
	GSHH-440 United States: Its People & Its Institutions			4
	GSSE-522 International Trade and Finance	4		
	GSSE-527 Seminar in Applied Economics			4
	Professional Electives		8	4
	*Liberal Arts (Elective & Senior Seminar)	6	4	4

‡See Pg. 24 lor Policy on Physical Education.
**See Pg. 102 for Liberal Arts requirements.*

Requirements for the BS in economics degree
Students earning a BS in economics will be required to complete 190 quarter credit hours of coursework. The 190 credit hours include 40 credit hours of required economics courses in the College of Liberal Arts. The required economics courses constitute the student's principal field of study. Students must maintain a 2.00 average for all Institute work and a 2.00 average in the principal field of study. Other graduation requirements are stated on page 17 of this bulletin.

Career opportunities
Graduates of the program are expected to find employment in entry level positions requiring quantitative economic analysis in business, finance, and government. The program also prepares students for graduate work in economics, business administration, and law.

Principal field of study
For students matriculated in the economics program, the principal field of study is defined to be 10 economics courses.

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.

* The BS In economics has been submitted to the State Education Department tor approval. Final action is pending.

College of Science

Dr. John D. Paliouras, Dean

The undergraduate in the College of Science at RIT gets a different kind of education than at any other school in New York State.

Our program combines work-study with the potential for undergraduate research and a strong faculty-student interaction brought about by the smallness of the various departments and the resulting classes. Our main interest is high quality teaching at the undergraduate level.

The industrial work-study program, which pays a salary, enables students to obtain this high quality education at a cost comparable to a public education. In addition, it allows students to see what industry is all about early in their undergraduate training rather than waiting until after graduation.

Our stress is on the practice of science in the real world, not just classroom lecturing. We're career-oriented and train students for where the jobs are.

In addition to the educational work-study experience, the science student at RIT is exposed to research by having the opportunity to work with a faculty member on a project. A number of these projects have resulted in publication in scientific literature.

We seek faculty members with a proper blend of interests in both teaching and research. Research permits the faculty member to practice his profession and stay up-to-date and provides projects for our students.

The modern trend in undergraduate education is to expose the student to the methods of undertaking a research project. This is as important to a science education as many of the lecture-type courses students are required to take as part of their major programs.

The College of Science has an ideal size to provide quality undergraduate education. It has 80 faculty members in the sciences and mathematics, most of whom hold the Ph.D. degree. This size provides faculty with a variety of expertise in sciences and mathematics, so a student can find a faculty member with whom to interact regarding a particular interest.

When the college moved into the new science building in 1968, it was very fortunate that RIT received about a million dollars in federal funds to permit the purchase of a wide variety of scientific instrumentation. Each year, new funds are spent to replace and update our equipment. As a result, we are as well-equipped as some universities that stress graduate education, but in our case this equipment is used by the undergraduates.

Our faculty realizes its responsibility to maintain up-to-date curricula so that our graduates will fit into the current needs of industry as well as meet the requirements of graduate schools. This challenge includes not only modern trends in science, but such things as the use of computers and sophisticated, modern lab equipment.

Many high school students don't know which of the sciences they wish to major in. We encourage such students to come to RIT as undeclared science majors. Programs can be designed which will enable them to postpone a definite commitment to a particular major in science without any losi of time toward a degree. This option has been attractive to quite a few high school students.

The best way to evaluate college programs is the success of the graduates. Our graduates have been very successful in both industry and graduate schools. We have found, for example, that they are doing exceedingly well in passing Ph.D. qualifying exams early in their graduate programs. In terms of industrial success, employers report that our graduates not only have good training for industry, but because of their work experience, immediately fit into the industrial way of life with a high degree of initiative and seriousness of purpose.

During the 21 years of its history as an integral academic unit of RIT, the College of Science has developed into a first rate educational center which not only services and supports nearly all of RIT's programs but offers a great variety of its own major programs.

In addition to eleven programs leading to a bachelor of science degree, the college has three master's programs that offer degrees in chemistry, clinical chemistry and materials science and engineering.

The programs

The College of Science has undergraduate programs in biology, biotechnology, chemistry, applied mathematics, computational mathematics, applied statistics, physics, medical technology, nuclear medicine technology, ultrasound technology, and biomedical computing. As a major in any of these programs, a student may prepare for a professional school through the advice and counsel of the College's Pre-Medical Advisory Committee.

Pre-Medical Studies

A student who is interested in medicine, dentistry, veterinary science, or any other professional careers can select any major in the College of Science. We believe that it is wise for a student to have a commitment and a degree in a specialized field since admission to professional schools is highly competitive. Also, it's not unusual for students to change their career goals once they are in college. Our Pre-Medical Advisory Committee advises and assists students who choose to go on to a professional school, and we're proud of our success in placing qualified graduates in some of the most prestigious medical and professional schools in the country.

Undeclared major

A student may enroll in the College of Science as an undeclared science major without designating a specific major. A program will be designed to meet the student's individual needs and goals. The program can be flexible and cover a number of introductory college level courses in science.

Prior to the end of the first year, the student should decide upon a specific major and may then enroll as a candidate for a degree in one of the departments; biology, chemistry, mathematics, physics or clinical sciences.

Declared major

The student who has definitely decided upon a specific major field will indicate a choice when applying, and may therefore be enrolled as a candidate for a degree in that department upon admittance by the Institute. Our programs are designed to prepare the student for competency in his or her chosen profession.

vr.	Undeclared Science option	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	**SBIB-201, 202, 203 General Biology Lec	3	3	3
	SBIB-205, 206, 207 Gen. Biology Lab	1	1	1
	**SCHG-211, 212 General Chemistry Lec	3	3	
	SCHG-213 Intro, to Organic Chemistry			3
	SCHA-261, 262, 263 Intro, to Chemical Analysis	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 I, II Lab		1	1
	*Liberal Arts (Core)	4	4	4
	‡Physical Education	0	0	0

***Any two of these three in a given quarter.*
‡See Pg. 24 tor Policy on Physical Education.
**See Pg. 102 lor Liberal Arts requirements.*

The programs in the College of Science are sufficiently flexible to allow the student to obtain an in-depth background in a discipline other than the chosen major. A wide selection of elective courses in such areas as business, chemistry, photography, computer science, physics, mathematics, and biology, make it possible to take a series of courses which could result in an elective concentration (i.e., minor) in an area related to, but not required for, the major.

To illustrate, above is a typical distribution of courses for the first year as an undeclared science option.

Each of the departments has majors programs operating on a five-year cooperative work/study plan.

Graduates of these programs in the' College of Science receive a bachelor of science degree. These graduates qualify for professional work in processing and laboratory operations, research and experimental work, or supervision of technical projects, as well as for graduate education leading to the master of science or doctor of philosophy degrees.

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 credits, 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.

The cooperative plan

The school year is divided into four 11-week quarters, Fall, Winter, Spring, and Summer. Students in the biology, biotechnology, mathematics, biomedical computing and physics programs attend classes during the fall, winter, and spring for the first and second year. At the beginning of their third year, employment arrangements are made for students in the five-year cooperative programs. Some students attend classes during the Fall Quarter while the rest work on their cooperative jobs. The two groups change at the beginning of the Winter Quarter, when those who were on co-op attend classes and the others work on co-op jobs. This interchange of the work/study periods continues throughout the remainder of the third, fourth and fifth years.

The accompanying diagrams illustrate the cooperative schedule as it applies to students in the five-year programs. Students in the five-year chemistry program participate in the co-op program as described above except their co-op experience starts at the beginning of their second year, Chemistry majors thus spend one year on campus and then spend alternate quarters in full-time study and full-time co-op employment for the next four years.

Teacher certification option

Students majoring in biology, chemistry, mathematics and physics can participate in a teacher preparation program offered jointly by Rochester Institute of Technology's College of Science and the University of Rochester's School of Education and Human Development. The professional semester is taken at the University of Rochester during fall term of the senior year.

Activities include a seminar on secondary teaching methods followed by a student teaching experience. Students completing the program qualify for a N.Y. State teaching certificate for grades 7-12.

Admission at a Glance: College of Science Programs

General Information on RIT* admission requirements, procedures and services Is Included In detail on pages 14-15 of this Bulletin.

Undergraduate programs are offered in the areas listed below.

The programs offered are flexible enough so that students can take courses to meet their individual needs and, at the same time, obtain a quality career-oriented education. Students can take electives in such courses as computer science, photography, or business.

The co-op plan of this college is ideal for students eager to increase their chances for employment after graduation.

Biology—Prepares students for occupations in research laboratories, food and agriculturally related industries, the pharmaceutical industry and environmental organizations. Also for pursuit of degrees in the medical professions and graduate degrees in biological disciplines. Degrees granted: AS-2 years; BS-4 or 5 year, depending on co-op.

Biotechnology—Biotechnology is defined as the use of living organisms or their components in applied research and industrial processes to meet fundamental needs of society in agriculture, food production, pharmaceuticals, chemistry and energy. Graduates will be prepared to work as technicians or assistant scientists in biotechnology or to enter advanced degree programs in that field or in related areas such as molecular biology, genetics, microbiology, immunology, and physiology. Degree granted: BS-4 or 5 year, depending on co-op.

Biomedical Computing—Graduates are prepared to assume positions on the staffs of medical and/or industrial laboratories or hospital computer departments, or to work with physicians and other health profes-

sionals in a clinical environment and on medical research projects. Degree granted: BS-5 year*

Chemistry—Graduates qualify for higher level positions in several fields of chemistry including professional industrial work in processing and laboratory operational research and experimental work, supervision of technical projects, managerial positions and graduate study. Degree granted: AS-3 year; BS-5 year.

Applied Mathematics, Computational Mathematics, Applied Statistics- Graduates qualify for positions in high-tech industry, governmental agencies and business, as well as graduate study. A combination of mathematics and statistics courses as well as electives in math-related areas and/or computer science greatly enhances employment opportunities. Degree granted: AS-2 year, BS-4 or 5 year, depending on co-op.

Medical Technology—Prepares students for employment in hospital, industrial-medical, or research laboratories. Students spend three years at RIT and one year in an approved hospital internship. Degree granted: BS-4 year*

Freshman Admission Requirements **Transfer Admission with junior standing**

Program	Required High School Subjects*	Desirable Elective Subjects	Two-Year College Programs	Desirable Minimum GPA
Applied Mathematics **Computational Mathematics** **Applied Statistics**	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Chemistry or Physics	Physics or Chemistry; additional mathematics	Liberal arts major with a math/science option. Changes from engineering, science or other math-oriented programs can be arranged.	2.0
Biology	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Biology	Physics; Chemistry; additional mathematics	Science or liberal arts major with a math/biology option or equivalent. Changes from other science major or engineering science can be arranged.	2.0
Biomedical Computing	Elem. Algebra; Plane Geometry; Inter. Algebra Trigonometry; Biology	Physics; Chemistry; additional mathematics; Computer Science	Liberal arts major in science, mathematics, computer technology and engineering. Changes from other allied health majors can be arranged.	2.5
Biotechnology	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Biology; Chemistry; Physics	Additional mathematics; Computer Science	Science or liberal arts major with math/biology option or equivalent. Changes from other science major or engineering science can be arranged.	2.5
Chemistry	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Chemistry	Physics, C.E.E.B. Chemistry Achievement Test, additional mathematics	Liberal arts major with a math/chemistry option or equivalent. Changes from other science majors or engineering science can be arranged.	2.0
Medical Technology	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Biology	Physics or Chemistry	Medical laboratory technology, other allied health programs or equivalent programs.	2.5
Nuclear Medicine Technology	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Biology; Chemistry	Calculus, Physics	Biology, medical technology, radiologic technology, other allied health programs.	2.0
Ultrasound Technology	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; 2 years lab science	Additional mathematics and science	Biology, medical technology, radiologic technology, other allied health programs.	2.5
Physic*	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Physics or Chemistry	Chemistry or Physics; additional mathematics; C.E.E.B. Physics or Mathematics Achievement Tests	Liberal arts major with a math/physics option or equivalent. Changes from other science majors or engineering science can be arranged.	2.0
Undeclared Science Option	Elem. Algebra; Plane Geometry; Inter. Algebra; Trigonometry; Lab science'	Physics, Chemistry Biology or additional mathematics	Not applicable	

[1] *About one-third of the program includes electives in social science, literature, and humanities.*
* *Four years of English are required in all programs, except where state requirements differ.*

Ultrasound Technology—Prepares students for positions in hospitals, clinics, research and administration. Graduates are trained in abdominal, obstetrical and gynecological ultrasound scanning techniques and procedures. Baccalaureate option-three years at RIT and one year of ciinical internship. Certificate option-one year of clinical internship. Degree granted: BS-4 year. Certificate-1 year.

Nuclear Medicine Technology- Prepares students to use radioactive materials in the diagnosis and treatment of disease. Graduates prepare and administer doses, operate nuclear medicine instruments, position patients for diagnostic procedures, and prepare information received from the tests for the doctor's interpretation. Students spend three years at RIT and one year in a hospital internship. Degree granted: BS-4 year.

Physics—Graduates find employment opportunities with industrial, academic and government agencies, or pursue graduate study in physics or in such areas as biophysics, atmospheric science, applied science or industrial business administration. Degree granted: AS-2 year, BS-5 year.

Pre-Medicine, Dentistry, Etc.— Students interested in pursuing a career in medicine, dentistry, optometry, osteopathic medicine, veterinary science or podiatry, major in any College of Science or Institute program; no formal program exists specifically for preparation for these careers. The faculty Pre-professional Advisory Committee counsels and assists RIT students in making application to these professional schools. Degrees are awarded in the programs chosen by the students.

Pre-Medlcal 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 pre-medical core (see chart at right). The pre-medical 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

**Students in these programs receive an AS in General Science upon the successlul completion ol the first two years.*

"Physics majors ordinarily are all on A-block.

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	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 program

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

"Physics majors ordinarily are all on A-block.

'Students in these programs receive an AS in General Science upon the successful completion of the first two years.

Pre-Medical Core		
Biology	1 year	With laboratory
Chemistry	2 years	General Chemistry, 1 year Organic Chemistry, 1 year (both years with laboratory)
Physics	1 year	With laboratory
Mathematics	2 quarters	Calculus-level
English	1 year	

Combining Your Program's Requirements with the Pre-Medical Core Courses

If you major in:	You will need to take the course* required for your ma|or, plus:
BS Applied Mathematics	••
BS Applied Statistics	••
BS Biology	None
BS Biomedical Computing	Elect one year of organic chemistry
BS Biotechnology	Elect one year of physics
BS Chemistry	Elect one year of biology
BS Chemistry (Biochem. Opt.)	None
BS Computational Mathematics	••
BS Medical Technology	None
BS Nuclear Medicine Technology	Elect one year of organic chemistry
BS Physics	••
BS Ultrasound Technology	Elect one year of general chemistry and one year of organic chemistry

*Some *rearrangement of the typical pattern of coursework within a program may be necessary.*
***Course credits beyond the usual 12 quarters needed to complete degree requirements are necessary. Call the College of Science, 716-475-2485, for more information.*

or prior to the time the student expects to take the MCAT, DAT, VAT, or other admissions test required for entrance to a professional school.

The way in which program requirements are combined with the pre-medical core courses varies according to the program in which a student is enrolled (see chart at right). Our biology, chemistry (biochemistry option), and medical technology program requirements already include the pre-medical core courses. Our biotechnology, chemistry, biomedical computing, nuclear medicine technology, and ultrasound technology degree programs contain some of the pre-medical core courses, and the remainder can be elected within the program with careful scheduling. The programs in the Mathematics and Physics departments do not contain many of the pre-medical core courses. A student in one of these programs (applied mathematics, computational mathematics, applied statistics, or physics) will need to take course credits beyond the number required for a degree. This could be accomplished by taking courses during one or two summers. Advanced placement credit from high school may reduce the additional time needed. Again, careful scheduling and early planning will reduce the difficulties.

Each student who is interested in Pre-Medical Studies is assigned an academic advisor who assists the student in selecting and scheduling coursework. In addition, our Pre-Medical Advisory Committee provides counsel and guidance on how to apply to professional school and coordinates the application process. Students graduating from the College of Science have gained admission to medical, dental, and veterinary schools throughout the country. Others have gone on to schools of podiatry, optometry, and osteopathy, and our Pre-Medical Advisory Committee is ready to assist students with these interests as well. However, all students considering Pre-Medical Studies should remember that acceptance at a professional school is highly competitive and is entirely the decision of that school.

We believe very strongly that all students in our program should commit themselves to developing the greatest competency possible in the discipline in which they are enrolled. It is important, therefore, that students interested in Pre-Medical Studies realize that, while their career objectives may include a professional school after graduation, they should select a program to which they are prepared to make a sincere and major commitment as an undergraduate student. This approach will increase a student's career options upon graduation.

Biology Program

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.

Requirements for the AS degree In biology

The student must meet the minimum graduation requirements of the Institute as described on page 18 and in addition must complete the requirements contained in the particular program listed below or its equivalent.

The program must include a minimum of six quarter courses in biology, six quarter courses in non-biological sciences and six quarter courses in general studies.

Requirements for the BS degree in biology

The student must meet the minimum graduation requirements of the institute as described on page 18 of this bulletin. In addition, the student must complete a minimum of 60 quarter credit hours in biology. A required core of courses comprises 43 quarter credit hours in biology (General Biology, General Ecology, Botany, Introductory Microbiology, Genetics, Biological Laboratory Techniques, Biology Seminar, one quarter course in Anatomy, one quarter course in

Yr.	**Biology**	**Qtr. Credit Hours**		
		FALL	**WTR.**	**SPG.**
	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
1	SMAM-214, 215 Introduction to Calculus	3	3	
	OR			
	SMAM-251, 252 Calculus I, II	**(4)**	**(4)**	
	ICSS-200 Survey of Computer Science			4
	*Liberal Arts (Core)	4	4	4
	‡Physical Education	0	0	0
	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
2	SCHC-230 Introduction to Co-op Seminar		1	
	SMAM-309 Statistics			4
	**Biology Electives		4	4
	Liberal Arts (Core)	4	8	4
	Physical Education	0	0	0
		FALL WTR.		**SPG. SMR.**
	SBIB-404 Introductory Microbiology	5		
	SCLM-432 Biological Laboratory Techniques I	4		
	SBIB-421 Genetics			4
3	SPSP-211, 212, 213 College Physics Lecture	6		3
4	SPSP-275, 276, 277 College Physics Lab	2		1
	Biology Electives	4		8
	Liberal Arts (Concentration and Elective)	8		8
	Institute-wide Electives	4		4
		FALL WTR.		**SPG.**
	SBIB-550 Biology Seminar			2
	Biology Electives	8		4
5	Liberal Arts Electives	4		4
	Liberal Arts (Senior Seminar)			2
	Institute-wide Electives	4		4

***One Biology elective must be any SBIB anatomy course and one Biology elective must be any SBIB physiology course. All other Biology electives can be any SBIB course other than those already designated by name above.*

‡See Pg. 24 tor Policy on Physical Education.
**See Pg. 102 lor Liberal Arts requirements.*

Physiology). The remaining 17 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.

Institute requirements for Liberal Arts may be found on page 102. The policy on Physical Education is described on page 24.

The specialization track

In conjunctibn with a faculty advisor, individual student programs can be established to meet personal goals and career objectives. Because these tracks 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 tracks 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, human physiology and 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 pre-requisites 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.

Yr.	Biotechnology	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-251, 252 Calculus I, II	4	4	
	SMAM-309 Statistics ..			4
	*Liberal Arts (Core)	4	4	4
	‡Physical Education Electives	0	0	0
2	SBIB-445 Tissue Culture ...	3		
	SBIB-446 Plant Tissue and Cell Culture		3	
	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
	ICSS-200 Survey of Computer Science .	4		
	SCHA-312 Analytical Chemistry-Separations Lec			3
	SCHA-319 Analytical Chemistry-Separations Lab			1
	SCHC-230 Introduction to Co-op Seminar		1	
	*Liberal Arts (Core)	4	8	4
	‡Physical Education Electives	0	0	0
		FALL WTR.		SPG. SMR.
3 4	SBIB-404 Introductory Microbiology ...	5		
	SBIB-402 Immunology	3		
	SBIB-442 Hybridoma Techniques	1		
	SBIB-421 Genetics....			4
	SBIB-310 Plant Physiology .			4
	SBIB-403 Cell Physiology ..			4
	**Biochemistry Electives	4		3
	Biology Elective	4		
	Institute-wide Electives	4		4
	*Liberal Arts (Concentration and Elective)	8		8
		FALL WTR.		SPG.
	SBIB-561 Biotechnology Senior Project	2		
	SBIB-579 Topics in Biotechnology			3
	SBIB-407 Microbial/Viral Genetics	4		
	SBIB-417 Industrial Microbiology			4
	SBIB-450 Genetic Engineering			4
	Institute-wide Elective.	4		
	Liberal Arts (Electives)	4		4
	Liberal Arts (Senior Seminar)	2		

***To be selected Irom SCHB-334, 702, 703, 704*
‡See Pg. 24 tor Policy on Physical Education.
**See Pg. 102 lor Liberal Arts requirements.*

Biotechnology Program

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.

The program requires a strong aptitude and interest in biology, chemistry, biochemistry, and genetics. Students learn the modern techniques and applications of biochemistry, cell physiology, genetics (general, microbial and viral), genetic engineering, microbiology, molecular biology and hybridoma formation.

Graduates of the program are prepared for employment as technicians or assistant scientists in industrial and academic research laboratories in the field of biotechnology. Industries that employ biotechnologists include those involved in agriculture, food production, pharmaceutics, chemistry, and energy. The program also prepares students for possible 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 00 of this bulletin. In addition, the program requires the successful completion of a total of 68 quarter credit hours in biology: General Biology, Introduction to Biotechnology, Molecular Biology, Plant and Cell Tissue Culture, Tissue Culture, Introductory Microbiology, Immunology, Hybridoma Techniques, Genetics, Plant Physiology, Microbial and Viral Genetics. Cell Physiology, Industrial Microbiology, Genetic Engineering, Topics in Biotechnology, and the Biotechnology Senior Project.

Additional requirements include general and analytical chemistry, organic chemistry, two courses in biochemistry, analytical chemistry/ separations, and survey of physical chemistry. Two courses in calculus, one in statistics, one in computer science, and one course to introduce the student to cooperative education, are also required.

Institute requirements for Liberal Arts may be found on page 102. The policy on Physical Education is described on page 24.

Chemistry

Terence C. Morrill, Head

The Department of Chemistry offers programs leading to the AS and BS degrees in chemistry, the BS degree in chemistry (biochemistry option), 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 higher level positions in the several fields of chemistry

Yr.	Chemistry BS (ACS Certified) Effective Fall 1984	Qtr. Credit Hours		
		FALL	WTR.	SPG.
	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
	ICSP-205 Computer Techniques		3	
	*Liberal Arts (Core)	4	4	8
	‡Physical Education Electives .	0	0	0
		FALL WTR.		SPG. SMR.
	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		
2	SCHO-431 Organic Chemistry 1			3
	SCHO-435 Organic Chemistry 1 Lab			2
	SPSP-311, 312 University Physics	4		4
	SPSP-375, 376 University Physics Lab	1		1
	*Liberal Arts (Core)	4		4
	‡Physical Education Electives .	0		0
	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
3†	SCHO-436, 437 Organic Chemistry II, III Lab	2		2
	SCHP-441 Physical Chemistry I			3
	SCHP-445 Physical Chemistry I Lab			1
	GLLC-530 German I			4
	*Liberal Arts (Core)	4		
	‡Physical Education Elective ..	0		
	SCHP-442, 443 Physical Chemistry II, III	3		3
	SCHP-446, 447 Physical Chemistry II, III Lab	1		1
	SCHC-401 Chemical Literature	2		
	SMAM-431 Matrix Algebra	4		
4	SCHI-762 Inorganic Chemistry I			3
	GLLC-531 German II	4		
	*Liberal Arts (Concentration),.	4		4
	*Liberal Arts (Elective)			4
	Institute-wide Elective			3
	SCHI-763, 764 Inorganic Chemistry II, III	3		3
	SCHA-711 Advanced Instrumental Analysis	3		
	SCHA-720 Advanced Instrumental Analysis Lab	2		
5	Chemistry Electives	3		3
	*Liberal Arts (Concentration) ..			4
	GLAI-501 Senior Seminar	2		
	institute-wide Electives	3-5		6-8

†Upon completion ol the third yeer, the associate in science degree is awarded.
‡See Pg. 24 lor Policy on Physical Education.
**See Pg. 102 tor Liberal Arts requirements.*

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 program 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 of the chemistry program provides students with the opportunity to integrate substantial biology and biochemistry experience into the BS chemistry program. Graduates of this option will qualify for professional study in medicine and dentistry, as well as graduate work in PH.D programs in biochemistry and molecular biology, and rewarding careers in the pharmaceutical and biochemistry industries.

Requirements for the AS and BS degrees in Chemistry

The student must meet the minimum graduation requirements of the Institute as described on page 18 and in addition must complete the requirements contained in the particular program listed herein or its equivalent as determined and approved by the Chemistry Department.

To meet the requirements leading to the BS degree approved by the Committee on Professional Training of the American Chemical Society, the student must take specifically designated courses in chemistry and related sciences and must complete a minimum of 187 quarter credit hours and 374 quality points.

All students must meet the requirements for the Institute's writing policy, as specified by the Chemistry Department.

Yr.	Chemistry BS (Biochemistry option) Effective Fall 1984	Qtr. Credit Hour*		
		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
	SBIB-201, 202, 203 General Biology	3	3	3
	SBIB-205, 206, 207 General Biology Lab	1	1	1
	*Liberal Arts (Core)		4	4
	‡Physical 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 Organic Chemistry I Lab			2
	SPSP-311, 312 University Physics	4		4
	SPSP-375, 376 University Physics Lab	1		1
	or			
	SPSP-211, 212 College Physics	(3)		(3)
	SPSP-271, 272 College Physics Lab	(1)		(1)
	*Liberal Arts (Core)	4		4
	‡Physical Education Electives	0		0
3†	SCHP-340 Intro to Physical Chemistry	3		
	SMAM-306 Differential Equations	4		
	SPSP-313 University Physics			4
	SPSP-377 University Physics Lab			1
	or			
	SPSP-213 College Physics			(3)
	SPSP-273 College Physics Lab			(1)
	SCHO-432, 433 Organic Chemistry II, III	3		3
	SCHO-436, 437 Organic Chemistry II, III Lab	2		2
	SCHP-441 Physical Chemistry I			3
	SCHP-445 Physical Chemistry I Lab			1
	*Liberal Arts (Core)	4		4
	‡Physical Education Elective	0		
4	SCHP-442,443 Physical Chemistry II, III	3		3
	SCHP-446, 447 Physical Chemistry II, III Lab	1		1
	SCHC-401 Chemical Literature	2		
	SCHB-702 Biochemistry	3		
	SCHB-704 Biochemistry—Molecular Biology			3
	*Liberal Arts (Core)	4		
	*Liberal Arts (Concentration)	4		4
	ICSP-205 Computer Techniques			3
5	SCHB-703 Biochemistry—Metabolism、	3		
	Science Electives	3-5		4-10
	*Liberal Arts (Concentration)	4		
	Liberal Arts (Elective)	4		8
	GLAI-501 Senior Seminar	2		

† Upon completion ol the third year, the associate in science degree Is ewarded.
‡See Pg. 24 lor Policy on Physical Education.
**See Pg. 102 for Liberal Arts requirements.*

Mathematics

Dr. George T. Georgantas, Head

Programs

The Department of Mathematics offers three bachelor of science degree programs: Applied Mathematics, Computational Mathematics and Applied Statistics. One may become eligible for the associate of science degree upon successful completion of the first two years of any one of these programs.

Applied Mathematics

The Applied Mathematics Program has been specially designed to prepare students as applied mathematicians, mathematical modellers and analysts in high technology industry, federal agencies and research institutions. In addition to a required concentration of courses in mathematics, complemented by four computer science courses, students in this program must select some mathematics-related area for a minor concentration. Possible minors include: applied statistics, physics, biology, business and economics, chemistry, computer,science, electrical engineering, industrial engineering, mechanical engineering, operations research, photoscience.

Yr.	Applied Mathematics	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-265 Foundations of Discrete Mathematics			4
	ICSP-220 FORTRAN	4		
	ICSP-241 Programming I—Algorithmic Structures		4	
	ICSP-242 Programming II—Data Structures			4
	*Science Electives	4	4	4
	*Liberal Arts (Core)	4	4	
	Physical Education Elective	0	0	0
2	SMAM-305 Calculus IV	4		
	SMAM-306 Differential Equations I		4	
	SMAM-351 Probability	4		
	SMAM-352 Applied Statistics I		4	
	SMAM-307 Differential Equation II, or			
	SMAM-318 Solutions to Bdry Val Probs, or			
	**SMAM-353 Applied Statistics II			4
	SMAM-431 Matrix Algebra			4
	ICSP 243 Programming III—Design & Implementation	4		
	*Science or Liberal Arts (Core)	4		
	Liberal Arts (Core)		4	4
	Liberal Arts (Core) (Split format)		2	2
	Elective		4	4
	Physical Education Elective	0	0	0
		FALL WTR.		SPG. SMR.
3	SMAM-432 Linear Algebra	4		
	SMAM-361 Mathematical Modeling			4
	***Program Electives	8		8
	Liberal Arts (Core/Concentration)	4		4
4	SMAM-411, 412 Real Variables I, II	4		4
	***Program Electives	4		4
	Liberal Arts (Concentration/Elective)	8		8
5	SMAM-531, 532 Abstract Algebra I, II	4		4
	***Program Electives	4		
	Liberal Arts	4		2

NOTE: A detailed analysis of the above program is contained in a booklet prepared by the Department of Mathematics and is available upon request.

**This schedule is recommended for students who select either the Biology sequence, or the Chemistry sequence with SCHO-230. However, if the Chemistry sequence is elected with SCHA-311 (offered only Fall Quarter), the student should take two liberal arts courses in the spring of the first year and none in the fall of the second year. If a student'has successfully completed an AP Calculus course, the student may take the Physics sequence here; but if the student begins the Physics sequence in the Winter Quarter, an extra liberal arts course should be taken in the Fall Quarter of the first year and no liberal arts course taken in the Fall Quarter of the second year.*

***Only it a statistics minor concentration is elected.*

****See Mathematics Department for approved program electives.*

Yr.	Computational Mathematics	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-265 Foundations of Discrete Mathematics			4
	ICSP-220 FORTRAN	4		
	ICSP-241 Programming 1—Algorithmic Structures		4	
	ICSP-242 Programming II—Data Structures			4
	*Science Electives	4	4	4
	*Liberal Arts (Core)	4	4	
	Physical Education Elective	0	0	0
2	SMAM-305 Calculus IV	4		
	SMAM-306 Differential Equations 1		4	
	SMAM-361 Probability	4		
	SMAM-352 Applied Statistics I		4	
	SMAM-410 Advanced Calculus			4
	SMAM-431 Matrix Algebra			4
	ICSP-243 Programming III—Design & Implementation	4		
	ICSP-305 Assembly Language Programming		4	
	***Computer Science Elective			4
	*Science or Liberal Arts (Core)	4		
	Liberal Arts (Core)		4	4
	Liberal Arts (Core) (Split format)		2	2
	Physical Education Elective	0	0	0
3		FALL WTR.		SPG. SMR.
	SMAM-432 Linear Algebra	4		
	SMAM-467 Theory of Graphs and Networks	4		
	SMAM-361 Mathematical Modeling			4
	***Program Elective			4
	ICSS-315 Digital Computer Organization	4		
	Liberal Arts (Core/Concentration)	4		4
	Elective —			4
	SMAM-511, 512 Numerical Analysis I, II	4 "		4
	***Program Electives	4		4
	Liberal Arts (Concentration)	4		4
	Elective	4		4
5	SMAM-531, 532 Abstract Algebra I, II	4		4
	***Program Electives	4		4
	Liberal Arts.	8		6

NOTE: A detailed analysis ol the above program is contained in a booklet prepared by the Department ot Mathematics and is available upon request.

sequence with SCHO-230. However, il the Chemistry sequence Is elected with SCHA-311 (ottered only Fall Quarter), the student should take two liberal arts courses in the spring ot the first year and none in the fall ol the second year, it a student has successfully completed an AP Calculus course, the student may take the Physics sequence here: but il the student begins the Physics sequence in the Winter Quarter, an extra liberal arts course should be taken in the Fall Quarter ot the first year and no liberal arts course taken in the Fall Quarter ol the second year.

***See Mathematics Department for approved program electives.*

** This schedule is recommended lor studer*

Computational Mathematics
The Computational Mathematics Program prepares students for a career in applied mathematics which incorporates extensive skills in computer science. In this program, much emphasis is given to usage of the computer as a tool in solving physical problems which have been mathematically modelled. Graduates of the program often choose positions as mathematical analysts, scientific programmers, software engineers or systems analysts.

Applied Statistics
The Applied Statistics Program has been designed to prepare students as applied statisticians for positions in both industry and governmental agencies. In addition to extensive coursework in the area of applied statistics, the program provides experience in the application of statistics, a strong mathematics background, four computer science courses, knowledge of statistical software and the necessary skills to communicate the results of a statistical analysis.

Yr.	Applied Statistics	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-265 Foundations of Discrete Mathematics			4
	ICSS-200 Survey of Computer Science	4		
	ICSP-208 Introduction to Programming (PASCAL)		4	
	ICSP-210 Program Design and Validation			4
	*Science Elective	4	4	4
	Liberal Arts (Core)	4	4	
	Physical Education Elective	0	0	0
2	SMAM-305 Calculus IV	4		
	SMAM-306 Differential Equations I		4	
	SMAM-351 Probability	4		
	SMAM-352 Applied Statistics 1		4	
	SMAM-353 Applied Statistics II			4
	SMAM-431 Matrix Algebra			4
	ICSP-220 FORTRAN	4		
	*Science or Liberal Arts (Core)	4		
	Liberal Arts (Core)		8	8
	Physical Education Elective	0	0	0
		FALL WTR.		SPG. SMR.
3	SMAM-432 Linear Algebra	4		
	SMAM-410 Advanced Calculus			4
	SMAM-354 Regression Analysis	4		
	SMAM-355 Design of Experiments			4
	**Electives (Mathematics/Statisitics/Technical/Free)	4		4
	Liberal Arts (Concentration/Electives)	4		4
4	SMAM-457 Research Sampling Techniques	4		
	SMAM-454 Non-parametric Statistics			4
	**Electives (Mathematics/Statistics/Technical/Free)	8		8
	Liberal Arts (Concentration/Electives)	4		4
5	SMAM-451, 452 Mathematical Statistics I, II	4		4
	SMAM-555, 556 Statistics Seminar I, II	4		2
	Liberal Arts (Electives/Senior Seminar)	4		6

NOTE: A detailed analysis of the above program is contained in a booklet prepared by the Department of Mathematics and is available upon request.

** This schedule is recommended for students who select either: the Biology sequence, or the Chemistry sequence with SCHO-230. However, if the Chemistry sequence is elected with SCHA-311 (offered only Fall Quarter), the student should take two liberal arts courses in the Spring of the first year and none in the Fell of the second year. If a student has successfully completed an AP Calculus course, the student may take the Physics sequence here: but if the student begins the Physics sequence in the Winter Quarter, an extra liberal arts course should be taken in the Fall Quarter of the first year and no liberal arts courses taken In the Fall Quarter of the second year.*

***See Department ot Mathematics lor approved Mathematics and Statistics electives.*

Co-op

RITs co-operative education program, known as "co-op," enables students to alternate periods in school (academic blocks) with full-time professional employment (work blocks) after successful completion of the first two years of the program requirements. Co-op is optional for students, but most Department of Mathematics students choose to co-op for the following reasons: co-op jobs are plentiful for our majors; students earn good salaries, and tuition and fees can be greatly offset (many times completely paid for) by the income one earns from co-op; and the contacts with industry afforded through co-op enable students to see how their classroom knowledge is applied to real-world problems; it also makes permanent jobs quite easy to obtain after graduation.

Teacher Certification Option

Applied Mathematics, Computational Mathematics and Applied Statistics majors who are interested in teaching at the high school level can participate in a secondary teacher preparation program offered jointly by RITs College of Science and the University of Rochester's School of Education and Human Development. Students in this option study at the University of Rochester during the fall term of their senior year. The program includes a seminar on secondary teaching methods followed by a student-teaching experience. Students completing the program qualify for a N.Y. State Teaching Certificate for grades 9-12.

Transfer Programs

Transfer programs are arranged on an individual basis.

Requirements for the AS and BS degrees:

The student must meet the minimum requirements of the Institute as described on page 18, in addition he/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. Additional information is available from the Department of Mathematics.

Course Description

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

Physics

Arthur Z. Kovacs, Head

The Physics Department offers programs leading to the AS and BS degrees in physics.

The BS degree in physics is a five-year program with a 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, or industrial business administration.

Requirements for the AS and BS degrees in phyiscs

The student must meet the minimum graduation requirements of the Institute as described on page 18 and in addition must complete the requirements contained in the particular program listed below or its equivalent as determined and approved by the Physics Department. 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.

Course descriptions

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

Yr.	Physics	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
	SCHC-211, 212 General Chemistry	3	3	
	SCHG-205, 206 Chemical Principles Laboratory	1	1	
	ICSP-205 Computer Techniques	3		
	*Liberal Arts (Core)	4	4	8
	‡Physical 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			A
	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	3-4		
	Institute-wide Free Elective			3-4
	*Liberal Arts (Core)	4	4"	4
	‡Physical Education Electives	0	0	
3	SPSP-401, 402 Intermediate Mechanics	4		4
	SPSP-421 Experimental Physics I	3		
	SPSP-431 Electronic Measurements I			4
	**SPSP-455 Optical Physics	4		
	SPSP-480 Theoretical Physics I			4
	*Liberal Arts (Concentration)	,4		4
4	SPSP-411,412 Electricity and Magnetism	4	/	4
	**SPSP-415 Thermal Physics	4		
	SPSP-522 Introduction to Quantum Mechanics			4
	Institute-wide Free Electives	3-4		
	*Liberal Arts (Concentration/Elective)	4		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, 551 Physics Seminar	1		1
	Physics Electives (400-500 level)			4,4
	Institute-wide Free Electives	3-4		3-4
	*Liberal Arts Electives	4		4

†Associate's degree awarded upon successful completion of second year
***SPSP-455 and SPSP-415 given in alternate years.*
‡See Pg. 24 for Policy on Physical Education.
**See Pg. 102 for Liberal Arts requirements.*

Biomedical Computing

J. Richard Gamham, Program Director

RITs biomedical computing bachelor of science 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 and Technology 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.

Yr.	Biomedical Computing	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	ICSS-202 Intro, to Computer Science	4		
	ICSP-241 Programming I—Algorithmic Structures		4	
	ICSP-242 Programming II—Data Structures			4
	SCLB-201 Intro, to Biomedical Computing		1	
	SBIG-201, 202, 203 General Biology Lec	3	3	3
	SBIG-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
	*Liberal Arts (Core)	4	4	4
	‡Physical Education Electives	0	0	0
2	ICSP-243 Programming III—Design & Implementation	4		
	ICSP-305 Assembly Language Programming		4	
	ICSP-220 FORTRAN			4
	SCLG-301 Medical Terminology	3		
	SBIB-305, 306 Physiology & Anatomy		4 -	4
	SMAM-251, 252 Calculus I, II OR	4	4	
	SMAM-204 College Algebra & Trigonometry	4		
	SMAM-214, 215 Intro, to Calculus I, II		3	3
	*Liberal Arts (Core)	4	4	8
	‡Physical Education Electives	0	0	0
		FALL WTR.		SPG. SMR.
3	ICSS-315 Digital Computer Organization	4		(4)
	ICSS-325 Data Organization & Management	(4)		4
	SMAM-309 Statistics			4
	SCLM-432 Biology Laboratory Techniques	,4		
	SPSP-211, 212 College Physics	3		3
	SPSP-271, 272 College Physics Laboratory OR	1		1
	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
	Chemistry Electives	3		3
	*Liberal Arts (Concentration/Elective)	s 4		4
	**Program Electives			4
5†	**Program Electives	8		8
	*Liberal Arts Elective	4		4
	Liberal Arts (Senior Seminar)			2

†There is some flexibility in the order in which these courses may be taken.
***Program electives must be approved by the biomedical computing advisor and can be used to concentrate in a science, computer science or a related area.*
‡See Pg. 24 for Policy on Physical Education.
**See Pg. 102 for Liberal Arts requirements.*

Requirements for the BS in biomedical computing

The student must meet the minimum graduation requirements of the Institute as described on page 18 and in addition must complete the requirements contained in the particular 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 completed at their previous school. Specific requirements will be determined for each transfer student by the department.

Course Descriptions

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

Medical Technology Program

James C. Aumer, Program Director

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 text 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).

Student 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 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 and with Millard-Filmore Hospital in Buffalo. Students may, however, seek admission to any approved hospital for their clinical experience.

Upon successful completion of the hospital experience, a bachelor of science is awarded. The student is then eligible to take a national registry examination for certification as a medical technologist.

Yr.	Medical Technology (Typical Course Schedule)	Qtr. Credit Hours		
		FALL	WTR.	SPG.
1	SBIB-201, 202, 203 General Biology Lec	3	3	3
	SBIG-205, 206, 207 General Biology Lab	1	1	1
	SCHG-215, 216, 217 General Analytical Chemistry	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, to Calculus **I, II**		3	3
	*Liberal Arts (Core)	4	4	**4**
	‡Physical Education Elective	0	0	0
2	SBIB-305, 306 Physiology and Anatomy		4	4
	SCHO-231, 232, 233 Organic Chemistry Lec	3	3	3
	SCHO-235, 236, 237 Organic Chemistry Lab	1	1	1
	SPSP-211, 212, 331 College Physics & Electronics	3	3	**4**
	SPSP-271, 272 College Physics Lab	1	1	
	ICSP-205 Computer Techniques			3
	SBIB-315 Medical Genetics		2	
	*Liberal Arts (Core)	8	4	**4**
	‡Physical Education Elective	0	0	0
	SCLM-401 Hematology/Immunohematology			4
	SBIB-404 Microbiology	5		
	SCHB-234 Biochemistry	4		
	SCLM-432, 433 Biology Laboratory Techniques		**4**	**4**
	SMAM-309 Statistics		**4**	
	SBIB-402 Immunology	3		
	SCLM-405 Diag. Bacteriology and Mycology		4	
	*Liberal Arts (Concentration)	4	**4**	4
	Elective			4

BS degree: the fourth year taken at an approved hospital for training medical technologists.
‡See Pg. 24 lor Policy on Physical Education.
**See Pg. 102 lor Liberal Arts requirements.*

Requirements for the BS degree in medical technology

The student must meet the minimum graduation requirements of the Institute as described on page 18 and in addition must complete the requirements contained in the particular 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.

Course descriptions

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

Medical Imaging Technologies

Nuclear Medicine Technology Program

Judith Newell, Program Director
Kristen Waterstram-Rich, 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
The NMT clinical training begins in early June and ends in May of the following 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 radioimmunoassay (RIA) theory and practice. One week of classroom and laboratory work in RIA at RIT during the winter of the training year is followed by four weeks of radioimmunoassay 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; Crouse—Irving Memorial Hospital. Rochester area—The Genesee Hospital; Highland Hospital; Rochester General Hospital; Park-Ridge Hospital. Binghamton area—Our Lady of Lourdes Hospital; Charles Wilson Memorial Hospital. Canandaigua area—Frederick Ferris Thompson 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 18 and in addition must complete the requirements contained in the particular 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.

Accreditation
The nuclear medicine technology program has been accredited by the Committee on Allied Health Education and Accreditation (CAHEA) and the Joint Review Committee on Education Programs in NMT of the American Medical Association.

Yr.	Nuclear Medicine Technology	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	3	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 Elective	0	0	0
	SPSP-211, 212, 213 College Physics Lec	3	3	3
	SPSP-271, 272, 273 College Physics Lab	1	1	1
	SCHO-231, 232 Organic Chemistry Lec	3	3	
	SCHO-235, 236 Organic Chemistry Lab	1	1	
	SBIB-305, 306 Physiology & Anatomy		4	4
	ICSP-205 Computer Techniques	3		
	*Liberal Arts (Core)	8	4	4
	‡Physical Education Elective	0	0	0
	SCLG-301 Medical Terminology			3
	SPSP-351, 352, 353 Radiation Physics	5	5	5
	SBIB-430 Radiation Biology	4		
	SMAM-309 Statistics			4
	*Liberal Arts (Concentration)	4	4	4
	Electives	4	8	4
4†	SCLM-401 Introduction to Clinical Nuclear Medicine	4		
	SCLN-402 Nuclear Medicine Procedures—Central Nervous System	1		
	SCLN-501 N.M. Procedures—Reticuloendothelial System	1		
	SCLN-502 N.M. Procedures—Skeletal System	1		
	SCLN-503 N.M. Procedures—Respiratory System	1		
	SCLN-510 N.M. Procedures—Urinary System	1		
	SCLN-511 N.M. Procedures—Endocrine Systems		2	
	SCLN-512 N.M. Procedures—Cardiovascular System		2	
	SCLN-513 N.M. Procedures—Digestive System			1
	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 Radiopharmacology		2	
	SCLN-518 Radionuclide Therapy and Radiation Biology		1	
	SCLN-519 Radiation Healthy Safety			2
	SCLN-520 Radioimmunoassay			4
	SCLN-521 Review in Nuclear Medicine			2
	SCLN-522 Clinical Nuclear Medicine I	6		
	SCLN-523 Clinical Nuclear Medicine II		7	
	SCLN-524 Clinical Nuclear Medicine III			7

†Clinical Internships—Affiliated Hospitals
‡See Pg. 24 for Policy on Physical Education.
**See Pg. 102 for Liberal Arts requirements.*

Medical Imaging Technologies

Ultrasound Technology Program

Roger W. Warner, Program Director
Kathleen J. Ritch, 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 aims at professional preparation of ultrasound technologists with specialty training in abdominal, obstetrical and gynecological ultrasonic techniques and 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. Both program options will also allow allied health or nursing professionals to be trained in a second health specialty.

Requirements for the BS degree in ultrasound:
The student must meet the minimum graduation requirements of the Institute as described on page 18, and, in addition, must complete the requirements contained in the particular curriculum listed below or its equivalent as determined and approved by the Department of Clinical Science. 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.

Requirements for the certificate option:
The student must meet the Institute requirements as well as the specific requirements listed below. The certificate option is a non-year clinical internship that has prerequisite course requirements. It is available to associate's 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.

Yr.	Ultrasound Technology Baccalaureate Curriculum Outline	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
	‡Physical 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**
	ICSS-202 Intro, to Computer Science or	**(4)**		
	ICSP-205 Computer Techniques	3		
	SCLG-301 Medical Terminology	3		
	SBIB-305, 306 Physiology & Anatomy		4	4
	SMAM-309 Statistics			4
	*Liberal Arts (Core)	4	**8**	4
	‡Physical Education Electives	0	0	0
3	SCLS-411 Intro, to Diagnostic Ultrasound	2		
	SCLG-415 Pathophysiology			4
	SCLS-413 Ultrasound Instrumentation			4
	SCLS-412 Ultrasonic Cross-Section Anatomy		' 4	
	SBIB-315 Medical Genetics		2	
	SPSP-361 Ultrasonic Physics	5		
	*Liberal Arts (Concentration)	4	4	4
	Program Electives	4	**8**	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 Gynecologic Ultrasound		5	
	SCLS-556 Intro, to Abdominal Ultrasound I		6	
	SCLS-557 Intro, to Abdominal Ultrasound II			7
	SCLS-558 Advanced Abdominal Ultrasound			7
	SCLS-560, 561 Seminar in Ultrasound		**1**	2

‡See Pg. 24 lor Policy on Physical Education.
**See Pg. 102 lor Liberal Arts requirements.*

Yr.	Ultrasound Technology Certificate Curriculum Outline Course Requirements	Qtr. Credit Hours		
		FALL	WTR.	SPG.
	Minimum Prerequisite Course Requirements: SCLS-412 Ultrasonic Cross-Section Anatomy— 4 credits or equivalent			
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 Gynecologic Ultrasound		5	
	SCLS-556 Intro, to Abdominal Ultrasound I		6	
	SCLS-557 Intro, to Abdominal Ultrasound II			7
	SCLS-558 Advanced Abdominal Ultrasound			7
	SCLS-560, 561 Seminar in Ultrasound		1	2

Clinical training in ultrasound technology:
The clinical internship for both the BS degree and certificate options will be conducted in a consortium of 13 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 2 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 ultrasound technology program is designed to meet the Essentials of Accredited Educational Programs for the Diagnostic Medical Sonographer as set forth by the Committee on Allied Health Education Accreditation (CAHEA).

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

National Technical Institute for the Deaf

William E. Castle, Director

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 academic year 1984-85, enrollment will be approximately 1,260.

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 more than 500 people and has closed circuit television. A number of productions are offered each year using both voice and sign language. There are also two well-equipped television studios, which are used to produce class and self-instruction videotapes and all captioning done at NTID.

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 tele-communication system that links all parts of the RIT campus.

Educational philosophy

The educational goal of NTID at RIT 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 at RIT 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 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 school. 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 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. Concurrently, 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 individualized needs. The students are also 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 some specific information on admission, costs and programs, please consult RITs *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 hearing-impaired 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 co-curricular programs support these areas of student development. Formal certification for many of these learning experiences is available through RITs 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 T.V. 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 the result of the fact that 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 the need in industry 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 A.A.S. programs in Industrial Drafting Technology, Electro-mechanical 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.

Visual Communication careers offer four program areas: Applied Art, Printing Production Technology, Applied Photography, and Media Production Technology. 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 knowledges, skills, and attitudes needed to be effective as a person, a member of a family, an employee, a consumer, and a citizen.

NTID at RIT 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.

NTID Undergraduate Programs

	Certificate	Diploma	A.A.S.
Applied Accounting		•	•
Applied Art	•	•	•
Applied Photography	•	•	•
Architectural Drafting		•	
Architectural Technology			
Business Occupations	•		
Civil Technology			•
Data Processing	•	•	•
Electromechanical Technology			•
Histologic Assistant	•		
Industrial Drafting		•	
Industrial Drafting Technology			•
Interpreting for the Hearing Impaired			•
Manufacturing Processes		•	
Media Production Technology		•	•
Medical Laboratory Technician			•
Medical Record Technician			
Office Practice and Procedures		•	•
Optical Finishing Technology	•	•	•
Printing Production Technology	•	•	•

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-ops occur during summer quarter.

Interpreting For the Deaf

The purpose of the A.A.S. 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	NITP-203 Principles of American Sign Language	3		
	NITP-204, 205 American Sign Language Interpreting I, II		3	3
	NITP-210 Fingerspelling and Number Comprehension	3		
	NITP-211 Voice Interpreting I		3	
	NITP-251, 252 Aspects and Issues of Deafness I, II	3		3
	NITP-261, 262 Theory and Practice of Interpreting I, II	3	3	
	NITP-271 Professional Interpreter L.			3
	NITP-331 Expressive Transliterating I			3
	*NITP-391 Principles of Tutoring/Notetaking			3
	*Liberal Arts Requirements	4	8	
	*Physical Education Elective	0	0	0
2	NITP-212, 213 Voice Interpreting II, III	3	3	
	NITP-281, 382 Interpreting Practicum I, II	5		5
	NITP-283, 382 Interpreting Seminar I, II	1		1
	NITP-343 Expressive Oral Interpreting/Transliterating	3		
	NITP-372 Professional Interpreter II	3		
	*NITP-392 Tutoring/Notetaking Practicum		3	
	NITP-396 The Support Service Professional			3
	NITP- Professional Elective. . . . . j			3
	*Contemporary Science Course		4	
	*Liberal Arts Requirements		8	*4*

*Courses *may be ottered/taken in quarters other than shown.*

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

LTC Richard K. Reinholtz, Professor of Military Science

Background

The Military Science Department and ROTC was established at RIT in 1969. The Professor of Military Science has commissioned officers every year since 1971. Over the years the program has included students from every academic discipline in the Institute.

Today the Military Science Department and ROTC is an academic course, a physical education course, and an extra-curricular activity. Participation in the program includes classroom instruction, laboratory practicums, physical training, and some weekend field 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 a member of the Institute community. Annual social events include the Dining-In and the spring Military Ball. Also, cadets participate in student orientations, demonstrations of military training throughout the academic year, special events geared towards fostering community relations and fund raising for worthy charities.

Military Science Department and ROTC graduates of RIT are working in commissioned officer positions that range from commanding units overseas to writing computer programs in North Carolina. RIT Military Science Department and ROTC graduates may be trained as pilots, linguists, lawyers, and scientists when they enter service in the Army of the United States.

Airborne, Air Assault (helicopter) and Ranger training are available 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 activities after commissioning.

	Yr.	Department of Military Science Four-Year Program	Qtr. Credit Hours		
			FALL	WTR.	SPG.
BASIC COURSE	1 MS I	*‡MMSM-201 Introduction to Military Science and Basic Map Reading OR XPEF-Orienteering	2 1 I"		
		*‡MMSM-202 Applied Health Dynamics		2	
		*‡MMSM-203 Military Heritage			2
ADVANCED COURSE	2 MS II	*MMSM-301 Military Geography	2		
		*MMSM-302 Psychology and Leadership OR		2	
		*MMSM-310 History of the Military Art		5	
		*MMSM-303 The Military and American Society			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 1 hour is an integral part of each course offered throughout the year. Class 1, Lab 1 = Credit 2*
‡Completion meets physical education requirement(s).

	Yr.	Department of Military Science Two-Year Program Basic Camp/Advanced Placement/Summer Compression	Qtr. Credit Hours		
			FALL	WTR.	SPG.
ADVANCED COURSE	3 MS III	MMSM-401 Military Tactics	3		
				3	
		MMSM-403 Military Operations			3
	4 MS IV	MMSM-501 Combined Arms Operation	4		
		MMSM-502 Military Administration & Logistic Management		**4**	
		MMSM-503 Military Ethos			4
		MMSM-510 Senior Seminar	2		

ROTC extracurricular activities include adventure training, pistol team, and numerous Ranger outings. The department has cross-country ski equipment, conducts rafting exercises in the fall, and offers survival training.

For those cadets enrolled in the upper division (described below) the program includes an annual trip to Fort Drum, N.Y. Usually conducted during April, this exercise is 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. After Advanced Camp, selected cadets have continued their training in positions ranging from Special Forces platoon leaders to Engineer platoon leaders.

Characteristics of the program

The Department of Military Science and ROTC offers a unique educational experience. A cadet is exposed to a curriculum that cannot be effectively duplicated. Modern military weapons, tactics, and leadership experiences cannot be gained from other sources. Only through this department can a college graduate acquire the knowledge and skills to serve his country as a commissioned officer in the U.S. Army. In addition, Army ROTC offer the college student adventure, training, extra money, and an option concerning job opportunities.

The four-year army ROTC program. This program is divided into two parts: the Basic Course (Junior Division) and Advanced Course (Upper Division).

The Basic Course is available throughout the freshman and sophomore years and is open to all students. ROTC physical education courses may be substituted for Military Science courses. Students enrolled in the Basic Course study basic military organizations, military first aid, psychology and leadership, and military history. This complete experience qualifies a student for enrollment in the Advanced Course (Upper Division), scholarships, airborne training, summer employment, air assault training, ranger training and many other opportunities to gain valuable on-the-job experience.

The Advanced Course is conducted during the last two years of college and includes attendance at the ROTC Advanced Camp, normally between the 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 within a cadet battalion and may participate in and/or help conduct various corps of cadets training activities.

The six-week Advanced Camp at Fort Bragg, N.C., gives each person an opportunity to plan, organize and lead his or her peers through a vigorous and challenging training program. Attendees are paid travel expenses and a salary for this intellectually and physically rewarding experience.

The two-year program. This program is offered to all qualified students with two school 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 Basic Camp, the student may be enrolled in the Advanced Course for the last two years. It should be noted that 2-year scholarships are available on a competitive basis during the Basic Camp. Interested students should begin processing applications for this program early in the sophomore year.

Physical education requirement
ROTC Basic Course cadets are excused from one quarter of physical education for each RIT military science course successfully completed up to a maximum of three quarters, or cadets who successfully complete the ROTC Basic Camp (six weeks basic military education and training) or Army Basic Training (eight weeks basic military education and training) are excused from three quarters of physical education. Additionally, ROTC Advanced Camp (six weeks of advanced military education and training) are excused from three quarters of physical education.

Commissioning
Commissioning of cadets as second lieutenants takes place during graduation day ceremonies. Prior to commissioning ceremonies, each cadet must successfully complete the following requirements:

1. Complete all degree requirements
2. Complete the Military Science curriculum
3. Attend and successfully complete the six-week Advanced Summer Camp

In addition, cadets desiring a commission must complete at least one course in each of the following fields of study:

1. Written Communication Skills
2. Human Behavior
3. Military History
*4. Management
*5. National Security Studies

'These courses may be deferred until after graduation only if approved.

Financial benefits
A monthly subsistence allowance of $100 per month is provided tax free, directly to each Advanced Course or Scholarship cadet throughout the school year. This, plus pay for Advanced Camp attendance, amounts to over $2,500 for the last two years of college. In addition, ROTC offers two and three year scholarships which pay for full tuition, fees and approximately $300 for books and supplies each year.

Graduate study opportunities
Commissioned officers usually 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 academic specialties may be paid in full by the U.S. Army.

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

Call:
Department of Military Science
Rochester Institute of Technology
Phone: (716)475-2881 or 2882

or Visit
Department of Military Science
George Eastman Memorial Building, Room 03161
Rochester Institute of Technology
Rochester, New York 14623

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

Classes Begin Fall 1985

Background
The ROTC program allows students upon graduation to earn appointments as commissioned officers with rank of second lieutenant in the United States Air Force. The program consists of a basic course, taken in the freshman and sophomore years, and an advanced course, taken in the junior and senior years. Four-, three-, and two-year scholarships covering tuition, fees, and books are available to students who meet specific academic and physical qualifications.

The ROTC program consists of elective courses that the student pursues concurrently with academic major requirements. Students may enroll in the ROTC basic course or attend the basic camp without incurring any military service obligation.

The basic course of Air Force ROTC is open to freshman men and women who are physically and morally qualified under standards prescribed by the Department of the Air Force.

Uniforms and books are furnished free of charge to students in the basic and advanced courses of both programs. Advanced-course students are currently paid an allowance of $100 per month. Highly qualified students are eligible to compete for Air Force scholarships, which provide full tuition, books, academic supplies, and fees, in addition to the $100 per month. Qualified junior students in the Air Force program may take flight training at government expense. Upon graduation, students who successfully completed advanced-course requirements are commissioned second lieutenants in the United States Air Force.

Admission to the advanced course is normally contingent upon successful completion of the Air Force basic course, demonstration of the necessary qualifications of leadership and academic proficiency, and meeting the physical requirements. Sophomores may receive advanced-placement credit for the basic course by attending a special, expenses-paid, six-week camp during the summer before the junior year. There are other options for veterans and graduate students. This opportunity is also available to seniors who expect to go directly into graduate school in a program that requires at least two academic years to complete, as well as to graduate students who will have two or more academic years remaining at the time of the next fall registration. Interested individuals should inquire early in the academic year because of the time involved in taking the necessary tests and in completing the required administration, selection, and notification processes.

Academic credit awarded toward graduation requirements for Department of Aerospace Studies courses is determined by the individual schools and colleges.

The Program

The goal of the Air Force ROTC is to commission as second lieutenants college graduates who accept responsibility willingly, think critically and creatively, and communicate effectively. Students in the Air Force ROTC program enroll in an aerospace studies course (ASC) each quarter. ASC 100, The Evolution of Air Power: First 50 Years, and Development of Aerospace Power: Aerospace Power Comes of Age is taken in the freshman year. ASC 200, National Security Organization is taken in the sophomore year. Both the 100- and the 200-level general military courses meet once a week.

During the junior year, students enroll in ASC 300, Concepts of Air Force Management. In the senior, or final, year, students enroll in ASC 400, National Security Forces/Public Policy and National Security Forces in Contemporary American Society. Both the junior and the senior-level professional officer courses meet three times per week.

All academic courses are taught by career Air Force officers who hold at least a master's degree and who have graduated from the Air Force Academic Instructor Course. These officers are on the University faculty and, for the duration of their assignments, hold the academic title of professor or assistant professor.

Each quarter, students attend a leadership laboratory.

For More Information

To call the Department of Aerospace Science, dial the Rochester Institute of Technology.
Phone (716)475-6631 and ask for current office phone number. You also may contact the Air Force ROTC Admissions Counselor, Room 200, Archbold Gym, Syracuse University, Syracuse, N.Y. 13210; (315)476-9272.

Course descriptions

For a complete outline of courses offered at RIT, please request the Course Description catalog from the Admissions Office beginning in the Fall of 1985.

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Donor: Mr. and Mrs. J. Warren McClure

Purpose: To perpetuate Mr. McClure's professional interest in the field of marketing.

Held by: Professor Stanley Widrick

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: Presently open

Russell C. McCarthy Chair

Established: 1979

Donors: Mr. Fred Gordon, Mr. Lucius Gordon, Mixing Equipment Company and General Railway Signal Company, units of General 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: Professor Ray C. Johnson

College of Fine and Applied Arts

Charlotte Federicks 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 Alfred F. Horton

Richard S. Hunter Professorship of Color Science, Appearance and Technology

Established: 1982

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: Professor Franc Grum

James E. 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 photo finishing industry.

Held by: Professor Ellsworth J. McCune

Paul and Louise Miller Distinguished Professorship in Newspaper Production Management

Established: 1976

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

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

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William A. Kern Professorship in Communications

Established: 1971

Donor: Rochester Telephone Corporation

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Ruth Terry—Lecturer
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Robert J. Webster, BS, SUNY at Buffalo; MS, Ball State—Associate Professor
Charles J. Weigand, BS, MS, SUC at Oswego—Associate Professor
Hermann Zapf—Calligrapher and Type Designer; Adjunct Professor

Technical and Education

Administration and Technical Staff

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College of Liberal Arts

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Paul Russ—User Computing Center Coordinator
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Thomas Bailey—Supervisor of Computer Operator Operations, Second Shift
Donna Ballva—Operations Librarian
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Edgar Buffan, BS, MS, Rochester Institute of Technology—Systems Programmer
Steven Good—Technical Assistant
Gregory Hawryschuk, AAS, Monroe Community College; BS, MBA; Rochester Institute of Technology-Assistant Director, Technical Support
Barbara King—Systems Programmer
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I.P. Llcata—Data Base Administrator
Andrew Potter—Systems Programmer
Richard Rowley—Supervisor of Computer Operator Operations

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Paul Bufano, AAS, Morrisville—Supervisor of Programming
Richard Godown, AAS, Alfred State—Senior Programmer
Lauren Johnson, BA, SUNY Binghamton—Systems Analyst
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Harvey B. Carapella, BFA, Rochester Institute of Technology—Producer/Designer; (Assistant Professor)
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Robert K. Gascon—Engineering Manager, Television Center
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Claudia Greene, BS, Rochester Institute of Technology—Photography Supervisor
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Carol Lake—Traffic Manager, Television
Joan Marsh, BFA, Rochester Institute of Technology—Graphics Supervisor
Robert J. Michel—Maintenance Engineer, Television
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Steve Wunrow, BS, Rochester Institute of Technology—Assistant TV Director

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Center for Community/ Jr. College Relations (CCJCR)

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Mary Ann McCarthy, AS, American College, Lucerne, Switzerland-Program Director, Educational Travel
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Elizabeth Doyne, BA, Brown University; MS, Ph.D., University of Georgia—Counselor
Linda Garfinkel, BS, Purdue University, MA, SUC at Brockport—Psychometrist
Mahlon Gebhardt, AB, Albright; M.Ed., Lehigh University—Counselor (Associate Professor)
Joseph Hauser, BA, University of Rochester; MA, Catholic University-Coordinator of Community Services (Associate Professor)
Peter Hayman, BA, SUNY at Stony Brook; M.Ed., Pennsylvania State University; Ph.D., University of Missouri-Columbia—Assistant Director (Associate Professor)
Joyce Herman, BA, University of Rochester; MS, Rochester Institute of Technology—Counselor (Associate Professor)—on professional leave
William Holmquist, BA, Northwestern University, M.Minn. McCormick Theological Seminary, Ed.M., University of Rochester—Counselor (Associate Professor)
Geneva Miller, AA, Monroe Community College, BS, University of Rochester, MA, SUC at Brockport—Counselor (Assistant Professor)
Kathryn Reissig, BS, Rochester Institute of Technology-Administrative Assistant

Higher Education Opportunity Program

Barbara Chambers-Ekpo, BA, Daemon College; MS (two) SUNY, Brockport—Director
Jonnl Urquhart, BS, Hampton Institute; MS, SUNY, Brockport—Assistant Director
Rajkumarie Bachan-Kleckley, BA, MS, SUNY at Brockport—Counselor
Michael Jordan, BS, M.Ed., SUNY at Brockport—Senior Counselor
Angela Moody, BA, Colgate University; MSW, Syracuse University—Academic Coordinator

Horton Child Care Center

Lita Boudakian, BA, Queens College; MA, Southern Connecticut State College—Director
John Perriello, BA, University of Rochester—Teacher

International Student Affairs

Barbara Letvin, BS, Ohio State University; MS, SUNY at Brockport—Director
Nancy Buckett, BA, Adelphi University—Assistant Director
Carolyn B. DeHority, BA, Earlham College—Coordinator, Special Programs

Department of Intercollegiate Athletics and Department of Physical Education, Intramurals and Recreation

Bruce E. Proper, BS, Ithaca-Director, Department of Physical Education, Intramurals and Recreation
Louis W. Spiotti, Jr., BS, Ithaca; MS, Ed., SUNY at Brockport—Director, Department of Athletics (Assistant Professor)
Fred Bleiler, BS, MS, Ithaca College—Associate Director, PE (Professor)
Gary B. Smith, BS, Ohio University; MS, Western Illinois University-Assistant Director for Business Affairs, Department of Athletics
Louis A. Alexander, Jr., BS, University of Rochester—Coordinator of Special Projects (Professor)
Janet J. Assenheimer, BS, MS, SUNY at Brockport—Head Coach, Softball and Volleyball; IA

Raymond C. **Bell—**Trainer; (Instructor) IA

John P. Buckholtz, Jr., BS, SUNY at Cortland—(Assistant Professor)

Bruce W. Delventhal, BA, Hamilton College; M.Div., Princeton Seminary-Men's Hockey Coach, IA

Earl W. Fuller, BS, Waynesburg State College; M.Ed., Pittsburgh—Wrestling Coach; (Professor)

William Glennon, BS, Springfield College; MS, SUNY at Albany-Lacrosse Coach; (Instructor)

Neil A. Kromer, BA, Eisenhower College—Coordinator of Operations, Department of Intercollegiate Athletics

Douglas J. May, BS, SUNY at Brockport; MS, University of North Carolina at Chapel Hill—Soccer Coach; (Assistant Professor)

Gregory Moss, BS, SUNY at Oneonta—Coordinator, Recreational Programs and Services

Ann Nealon—Women's Tennis Coach; (Instructor)

Kathy Robords, BS, SUNY at Cortland—Women's Swim Coach; (Instructor)

Helen F. **Smith—**(Associate Professor)

Daryi C. Sullivan, BS, Rochester Institute of Technology—Coordinator of Intramurals; (Assistant Professor)

Peter J. Todd, BS, SUNY at Cortland—Track and Cross Country Coach; (Assistant Professor)

Office of Minority Student Affairs

Cynthia McGill, BA, University of Rochester; MS, Rochester Institute of Technology—Director

Office of Special Services

Marie Giardlno, BA, Nazareth College; Middlebury College-Director

Karen Combs, MA, University of Rochester—Math Instructor

Jacqueline Lynch-Czamanske, MS, Nazareth College—Counselor

David L. Watson, BA, MA, University of Montana—Counselor

Orientation and Special Programs

Joseph T. **Nairn,** BA, Thiel College; M.Ed., University of Vermont-Director

Dawn Murley—Administrative Assistant

Residence Life

H. Preston Herring, BA, West Virginia Wesleyan College; M.Ed., University of Vermont; Ph.D., Michigan State University—Director, Residence Life

Michael D'Arcangelo, BA, Westminster College; MA, Bowling Green—Area Complex Director

Louis Copertlno, BS, SUNY, Geneseo; MA, Michigan State University-Area Complex Director

Joseph Germonto—Assistant Director, Building Services

Anne Kingston, BA, Bates College; M.Ed., University of Rochester—Area Complex Director

Paul Montinieri, BA, St. Michael's College; M.Ed., University of Vermont—Area Complex Director

Carol Rosa, BA, Ladycliff College; M.Ed., University of Southern Maine—Assistant Director, Student Development

Elizabeth Sampson, BA, Westminster College; MA, Bowling Green—Area Complex Director

Doreen Simons, BA, Gallaudet College; MA, New York University—Assistant Area Complex Director

Kathleen Sinel, BS, Rochester Institute of Technology—Coordinator of Purchasing, Vending and Conferences

Howard Ward,, BA, Mount Union College; MA, Bowling Green—Assistant Director, Administrative Services

John Weas, BA, MS, Indiana University—Director of Off Campus and Apartment Life

Kathleen Allen, BA, University of North Carolina at Chapel Hill; M.Ed., Colorado State University—Assistant Director, Off Campus and Apartment Life

Nancy Rienzo, Administrative Assistant, Off Campus and Apartment Life

Student Health Services

E. Cassandra Jordan, BA, Clark College; BS, Meharry Medical College; MS, SUNY at Geneseo—Director

Igor Mlhajlov, MD, Faculty of Medicine, Zagreb University-Medical Director

Martin Zinaman, MD, Downstate Medical Center—Staff Physician

W. Patrick Bernal, MD, University of Virginia—Part-time Physician

Joseph Kutchukian, MD, Lausanne Medical University—Part-time Physician

Karen Ekstrom, BA, Albion College; BS, University of Rochester School of Nursing—Nurse Practitioner

Julie Leonardo, BS, MS, University of Rochester School of Nursing—Nurse Practitioner

Robert McCann, BS, Tufts University; MS, Pace University—Nurse Practitioner

Julia Shattuck, RN, Highland Hospital School of Nursing; MSN, University of Rochester School of Nursing—Nurse Practitioner

Julia Steigblgel, BS, MS, University of Rochester School of Nursing—Nurse Practitioner

Mary Hansen Vevera, RN, Genesee Hospital School of Nursing; BS, University of Rochester School of Nursing; MS, University of Rochester—Head Nurse

Helen Brabant, RN, University of Rochester School of Nursing—Staff Nurse

Deanna Turner, RN, Swedish Covenant Hospital School of Nursing—Staff Nurse

Patricia Coniglio, RN, Rochester General Hospital School of Nursing; BSN, University of Rochester School of Nursing; AS, Monroe Community College

Charlyn Feeney, RN, Genesee Hospital School of Nursing; BS, Nazareth College—Health Education Coordinator

Student Activities and Union Services

Margaret A. Chapa, BA, Michigan State University; MA, Michigan State University—Director

Helene K. Manglaris, BS, MS, SUC, Brockport

Michael T. **D'Arcangelo,** BA, Westminster College; MA, Bowling Green State University—Coordinator of Greek Affairs

Marta L. Stephens, BA, University of Missouri; MS, University of Missouri

Richard Morse, AAS, CCFL

Faculty and Staff Emeriti

Hans J. Barschel, Professor Emeritus, Art and Design

Harold J. Brennan, Dean Emeritus, College of Fine and Applied Arts

Harold J. Brodie, Professor Emeritus, Mechanical Engineering

Mary E. Burnet, Professor Emeritus, Business Administration

Frank A. Clement, Professor Emeritus, General Studies

Silvio DeCrisofaro, Professor Emeritus, College of Continuing Education

Mark Ellingson, President Emeritus

Albert Erskine, Professor Emeritus, Mathematics

Loy Golladay, Professor Emeritus, National Technical Institute for the Deaf

Ruth E. Gutfrucht, Professor Emeritus, Art and Design

Mykola Hadslnsky, Professor Emeritus, Physics

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Edwina B. Hogadone, Dean Emeritus, College of Business

Clayton E. Hughes, Professor Emeritus, General Studies

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

Herbert J. Mossien, Professor Emeritus, College of Business

Russell A. Norton, Professor Emeritus, College of Continuing Education

Egidio Papa, Associate Professor Emeritus, General Studies

Robert D. Pease, Dean Emeritus, College of Continuing Education

Daniel Petrlzzi, Professor Emeritus, Eisenhower College

Harold Raphael, Professor Emeritus, Packaging Science

George W. Reed, Professor Emeritus, Electrical Engineering

Albert D. Rlckmers, Professor Emeritus, Photographic Arts and Sciences

Donald L. Ritchie, Professor Emeritus, Printing

Donald C. Robinson, Department Head Emeritus, Electrical Engineering

Nina M. Sandberg, Associate Professor Emeritus, Chemistry

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Gerhard Schumann, Professor Emeritus, Photographic Arts and Sciences

Edward L. Scouten, Professor Emeritus, NTID

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Hollis N. Todd, Professor Emeritus, Photographic Arts and Sciences

Arden L. Travis, Professor Emeritus, College of Business

Clarence E. Tuites, Professor Emeritus, Electrical Engineering

Norman J. Weinreber, Associate Professor Emeritus, Institute College

Mason E. Wescott, Professor Emeritus, Statistics

Helen W. Wheeler, Associate Professor Emeritus, Reading and Study Clinic

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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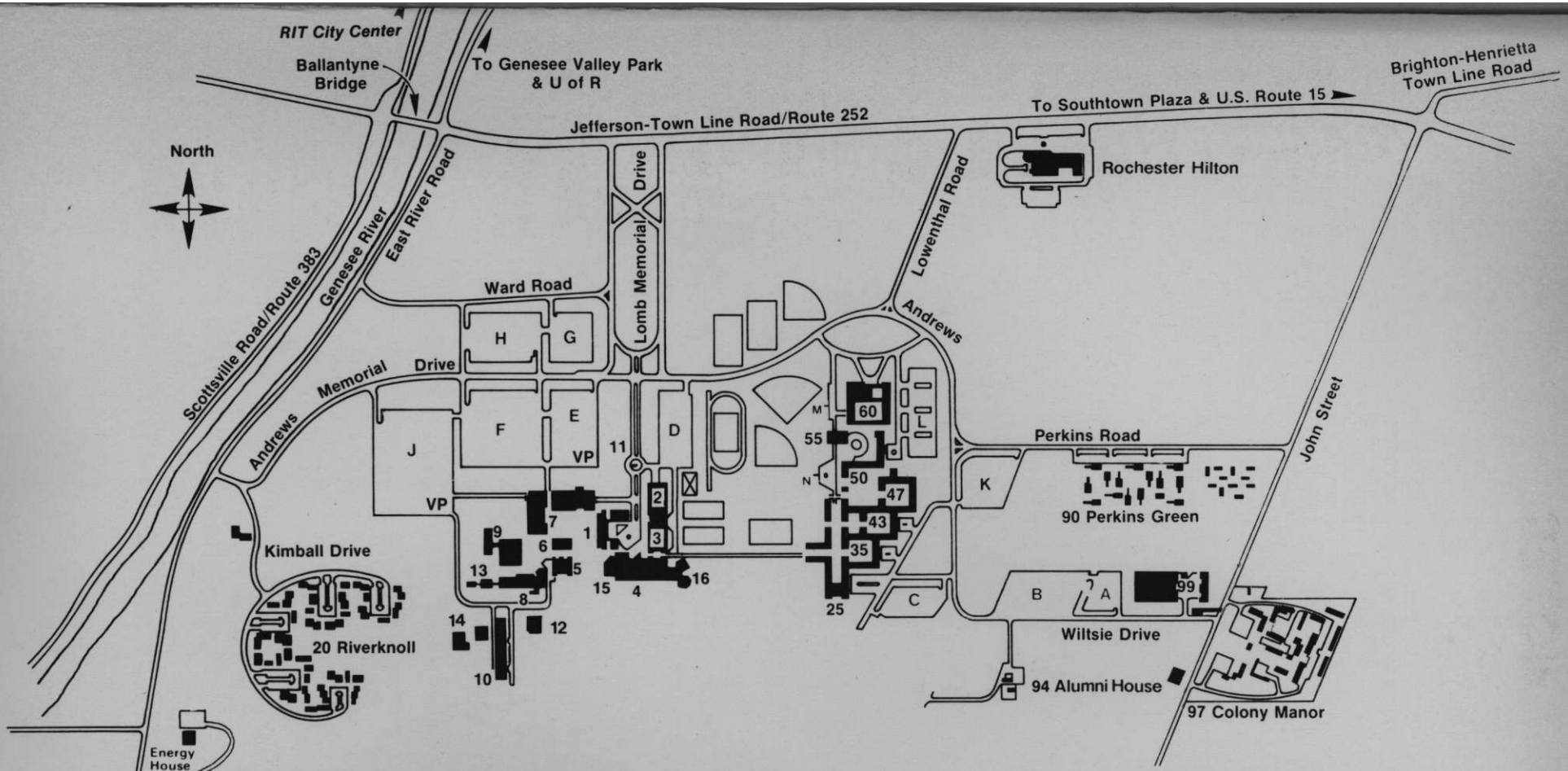


Building Numbers and Names

1 George Eastman Memorial Building: Administration tower, College of Continuing Education, College of Applied Science and Technology, School of Human Services

2 Frank Ritter Memorial Ice Arena—

3 George H. Clark Memorial Gymnasium; Edith Woodward Memorial Pool; Multi-Purpose Temporary Recreation Facility

4 College-Alumni Union and Ingle Memorial Auditorium

5 Wallace Memorial Library

6 College of Liberal Arts

7 James E. Booth Memorial Building: College of Fine and Applied Arts, **Bevier Gallery, 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

10 Ross Memorial Building: Office of Computer Services, School of Computer Science and Technology

11 Information Center

12 Max Lowenthal Memorial Building: College of Business

13 Center for Quality and Applied Statistics

14 The Hugh L. Carey Building NTID

15 Bookstore

16 Kilian J. and Caroline F. Schmitt Interfaith Center

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

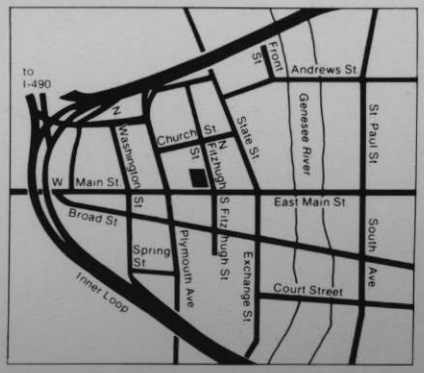
94 Alumni House 415 John Street

97 Colony Manor: Campus apartment housing

99 Physical Plant buildings

VP: visitors' parking area

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.

Rochester Institute of Technology

Office of Admissions
One Lomb Memorial Drive
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Rochester, NY 14623