Overview

Welcome to the School of Engineering Technology, an integral part of the College of Applied Science and Technology. The school and college are known as the place of choice for an education that embraces the integration of hands-on learning and application with a firm grounding in the STEM (science, technology, engineering, and mathematics) disciplines. Our academic majors are unique and our graduates are sought after by industry.

Distinguishing characteristics of each major include:
- Career-focused curricula grounded in theory and enhanced through application,
- An expectation that all students will make meaningful contributions in their areas of study,
- An expectation that all students will complete cooperative educational experiences in their intended career fields,
- An expectation that all students have an opportunity to complete an international study experience, and
- Preparation to work in a global environment.

No matter the major you choose, you will receive a strong academic experience and education. You will also have the opportunity to engage in areas of study for which we are recognized as a world leader for our innovative curricula, faculty and staff expertise, and world-class facilities and equipment.

The School of Engineering Technology, as well as the college, offers numerous undergraduate and graduate degree programs. In fact, the School of Engineering Technology produces more undergraduate degrees in engineering technology than any other private institution in the U.S.

We offer an academically enriching, diverse, and welcoming environment in which our students thrive and build the life and professional skills needed to be successful citizens and leaders in a global community.

We invite you to explore the School of Engineering Technology. What you will find is a world of opportunity, a supportive and welcoming environment, and a community of committed and dedicated scholars, mentors, and professionals.

SCHOOL OF ENGINEERING TECHNOLOGY (and related programs)
Undergraduate students: 1,515
Graduate students: 273
Faculty: 70
Experiential learning: 14 months of co-op required in the School of Engineering Technology; 11 months for environmental sustainability, health and safety; six months for packaging science. Study abroad and undergraduate research encouraged.
Outcomes Rate: 97%
Degrees offered: BS, MS

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*Programs accredited by the Technology Accreditation Commission of ABET (TAC/ABET), 111 Market Place, Suite 1050, Baltimore, Maryland 21202, telephone 410-347-7700, www.abet.org.
FAST FORWARD:

Applied technology, interactive teams, and hands-on, minds-on learning. This is engineering technology at RIT.

RIT is recognized as one of the world’s leading technological universities.

RIT has long been a leader in educating scientists, technologists, and engineering professionals for dynamic, exciting careers. The School of Engineering Technology offers eight majors in a range of technological fields, including engineering technology, sustainability, packaging science, and safety technology. You’ll combine hands-on learning as you apply current and emerging technologies to interactive projects and assignments. You’ll also collaborate on multidisciplinary teams where you’ll apply your knowledge and technical skills to define problems and help create real-world solutions.

What is engineering technology?

Engineering technology majors are very different from traditional engineering majors. In engineering technology, technical subjects are taken early in the curriculum. Extensive laboratory experiences allow students to be motivated by real-world applications while also studying fundamentals. Engineering programs typically teach more mathematics, science, and liberal arts in the first two years.

At RIT, engineering technology students take applied calculus and college physics (algebra-based and trigonometry-based sequences), while engineering students take theoretical calculus and university physics (calculus-based sequences). Engineering technology graduates apply current engineering principles and theory to the solution of industrial problems, while engineering graduates are more likely to work on conceptual research, open-ended design challenges, and the development of new principles. Both tracks can lead to exciting professional careers, so it is important for you to assess your abilities, interests, and career objectives before deciding on an engineering technology or engineering major.

Marketable career preparation

By studying in state-of-the-art facilities and working with industry-standard equipment, RIT students enter the workforce prepared to make an impact their first day on the job. Our majors emphasize the application of current technology to the solution of contemporary problems. Hands-on laboratory exercises, project-based assignments, and co-op work experience reward you with practical, relevant, and broad experience in your career field.

At RIT, we realize that career success requires more than just technical and academic skills. People skills can be just as important. Here you’ll acquire real-world skills in communication, critical thinking, teamwork, and problem solving through a required liberal arts component.

The cooperative education advantage

Classroom learning is only one part of your RIT education. You’ll also gain valuable on-the-job experience through cooperative education—alternating periods of on-campus study with periods of full-time paid employment directly related to your career field. All majors described in this viewbook offer co-op, giving you the chance to apply your skills in professional situations while you’re still a student. Whether you work for a large industrial company, in a world-renowned engineering facility, or at a small consulting firm, you’ll get a good idea of what to expect in your career after graduation.

A high-tech learning environment

As an engineering technology student, you’ll spend plenty of time in media-supported classrooms and “smart” labs, which allow the use of computer modeling and 3D imaging. In our Center for Integrated Manufacturing Studies, you’ll find an impressive array of technology-based laboratories for courses in CAD/CAM systems, plastics, assembly automation, and electronics manufacturing, instrumentation, environmental testing, and package testing. You’ll also have access to the College of Applied Science and Technology’s interactive work spaces for small group study and team projects and three computer centers.

Experienced, dedicated faculty

The academic excellence and professional experience of nearly 100 full-time faculty members enriches your education in the College of Applied Science and Technology. Our professors are dedicated teachers who have significant industry experience in the fields in which they teach. They bring today’s technology issues directly into the classroom and use examples from industry to illustrate key concepts. You’ll benefit from the chance to know them as mentors, advisers, and friends who are dedicated to helping you succeed.

Graduates in demand

Hundreds of employers recruit on campus each year because they know RIT graduates have professional abilities, technology skills, and work experience that are current with industry demands. Our graduates work for a range of companies in high-tech industries, including software development companies, computer manufacturers, civil engineering and construction firms, environmental consultants and management agencies, manufacturers, telecommunications conglomerates, packaging companies, and more. For the past two years, more than 95 percent of our graduates are employed or in full-time graduate school within six months of graduation.
UNDECLARED ENGINEERING TECHNOLOGY OPTION

If several of the engineering technology majors in this viewbook appeal to you but you are unsure about your career direction, you may enter RIT as an undeclared engineering technology student. This lets you spend up to a year exploring the career options available without any loss of time toward graduation. You’ll take foundation courses that can be used to fulfill the requirements of any of our engineering technology or related majors. During your freshman year, you’ll take a career-discovery course, and a faculty adviser will help you narrow your program focus. At the end of your freshman year in the undeclared option, you will choose the program that best fits your career goals and declare a major.

WOMEN IN TECHNOLOGY

Women in Technology (WIT) offers women in science and technology-based majors at RIT a wide range of opportunities and supportive resources. Administered through the College of Applied Science and Technology, WIT hosts both academic and social activities for female students to connect outside the classroom through their shared passion for technology. With an engaging and dynamic alumnae network, WIT provides opportunities to network with supportive alumnae about co-op and permanent employment. WIT also reaches out to students in grades K-12 to encourage young girls to explore the many exciting career options available in the science and technology fields through Girl Scout Technology Days. Visit the WIT website at www.rit.edu/wit.
what you’ll study

FIRST AND SECOND YEARS
First Year Writing
Year One: College Experience
Materials of Construction w/ Lab
Computer Aided Design and Drafting
Physics I, II w/ Labs
Pre-calculus
Calculus A, B
Statics
Surveying w/ Lab
Civil Engineering Graphics w/ Lab
Elements of Building Construction
Elementary Structures
Elementary Soil Mechanics w/ Lab
Differential Equations and Multivariable Calculus
General and Analytic Chemistry w/ Lab
General Education—
Liberal Arts and Sciences
Wellness Education

THIRD THROUGH FIFTH YEARS
Hydraulics w/ Lab
Land Development Computer Applications
Structural Analysis & STAAD
Effective Technical Communication
Foundation Engineering
Structural Design (Steel or Concrete)
Chemistry of Water: Principles and Analysis
Technical or Structural Design Elective
Principles of Water and Wastewater Treatment
Transportation Engineering w/ Recitation
Dynamics in CET
Civil Engineering Technology Capstone
Technical Elective
Math or Science Elective
General Education—
Liberal Arts and Sciences
Cooperative Education Preparation
Cooperative Education

Most of us can’t imagine a world without roads, bridges, airports, modern buildings, clean water, or electric power. Thanks to civil engineering technology professionals, we live, work, and travel in a comfortable and safe world. But these professionals deal with more than critical infrastructure and building construction. They also are devoted to solving today’s tough design challenges for the public good, from restoring polluted rivers to designing green skyscrapers.

If you’re intrigued by technology and fascinated by the way we interact with our infrastructure, a civil engineering technology career is for you. Industry and government alike seek professionals who bring technical and communications skills required to assess soil conditions, upgrade bridges and roads, and help solve the problems of our aging infrastructure in an environmentally responsible manner.

Challenging and rewarding
As a civil engineering technology student, you’ll take hands-on courses to acquire the technical knowledge and methods you need to become an expert problem solver. You’ll also gain field experience and learn how to use computer technology, operate surveying equipment, evaluate soil, and analyze structures such as commercial buildings, highways, bridges, and tunnels. Your upper-level courses address the broad scope of civil engineering technology, including hydraulics, structural analysis and design, soil mechanics, and principles of water and wastewater treatment.

Students may choose to pursue one of three professional options—construction management, structural design, or water resources—to gain a deeper understanding of these particular topics and how they impact civil engineering.

Paid, professional experience
RIT’s civil engineering technology major requires 12 months of cooperative education. Co-op gives you the chance to explore the wide array of career choices in the civil engineering technology field while you’re still in school. You’ll also gain paid, professional experience that enhances your prospects in the job market. Students generally work for private engineering firms, construction companies, inspection and testing companies, or government agencies. You might survey property for an engineering firm, assist construction project managers, or work in operations at a municipal water treatment plant.

Graduates step into leadership roles
A practical, rigorous education, coupled with cooperative education experience, places our civil engineering technology graduates in great demand. You’ll have many career choices in a variety of work environments—outdoors on site or in office and laboratory settings. Recent graduates are employed as consulting engineers, project managers, structural designers, construction inspectors, and environmental engineers.

Civil Engineering Technology
rit.edu/cetems

Tim Reed grew up watching his grandfather build a car in the family’s backyard—from the chrome fenders on the outside to the engine parts on the inside. Reed, a civil engineering technology major who grew up in the city of Rochester, had a chance to make an impact of his own on young minds. He completed cooperative education experiences at local engineering firms LaBella Associates and Pike Construction. Both companies were instrumental in renovating Edison Tech and Charlotte high schools in the city of Rochester. Reed plans to work in Rochester and pursue graduate school in either engineering or project management.
Computer Engineering Technology

rit.edu/ect

Computer engineering technology graduates are valued for their unique understanding of the relationships between hardware and software. With a focused academic preparation in embedded systems design, these versatile professionals can work throughout the ever-growing computer industry and in virtually any other industry as well. The computer engineering technology major offered in RIT’s College of Applied Science and Technology prepares students to work as hardware design engineers, firmware specialists, and computer systems designers.

An emphasis on skill development

RIT’s computer engineering technology major bridges the gap between hardware and software by providing a solid foundation in both areas and tying them together with a curriculum that includes intensive classroom, laboratory, and cooperative education components. The curriculum includes the underpinnings of math, physics, circuit theory, digital electronics, and microprocessor-based hardware and software design. Through a variety of theoretical learning experiences, laboratory exercises, and projects, students learn industry-standard approaches to hardware and software development with a focus on embedded systems design and integration. You may also choose to explore technical areas including power and energy, computer science, and wireless communication. Options in either audio or telecommunications provide in-depth study in these two areas and provide you with an added level of knowledge upon graduation.

Earn while you learn

You will spend 12 months on paid cooperative education assignments in the computer engineering technology major. During this time you will earn a significant salary and gain extensive professional experience working in industry. Upon graduation you will have real design experience using state-of-the-art microprocessors, Field Programmable Gate Arrays (FPGAs), and associated development tools for software and HDL development. In recent years students have worked for such industry leaders as Intel Corporation, Harris Corporation, Redcom Labs, National Semiconductor, Apple, and Tesla.

Pursue a dual degree

To really set yourself apart, you may consider an accelerated dual degree, where you can earn a BS in computer engineering technology and an MS in computer science in as little as five years.

A growing career field

The computer engineering technology major prepares you for a variety of careers in high-technology fields. Our graduates are working as software and hardware design engineers, DSP engineers, systems analysts, embedded programmers, and systems engineers.

what you’ll study

FIRST AND SECOND YEARS
First Year Writing
Year One: College Experience
Calculus A, B, C
DC Circuits w/ Lab
Digital Fundamentals w/ Lab
AC Circuits w/ Lab
Computational Problem Solving I
Electronics I, II w/ Labs
Microcontroller Systems w/ Lab
General & Analytical Chemistry I w/ Lab
Calculus and Differential Equations
Digital Systems Design w/ Lab
Introduction to Statistics I
General Education—
  Liberal Arts and Sciences
  Wellness Education

THIRD THROUGH FIFTH YEARS
College Physics I
Signals, Systems, and Transforms
Hardware Description Language w/ Lab
Computational Problem Solving II
Career Orientation
Networking Technologies
Digital Signal Processing
Design and Innovation
Technical Electives
Engineering Economics
Embedded Systems Design I, II
Real-Time and Embedded Systems
Free Electives
General Education—
  Liberal Arts and Sciences
  Cooperative Education

AUDIO OPTION
Fundamentals of Audio Engineering
Modern Audio Production
Introduction to Acoustics
Audio Power Amplifiers

TELECOMMUNICATIONS OPTION
Networking Technologies
Communications Electronics w/ Lab
Wireless RF Systems
Fiber Optics Technology

“Without a doubt, the computer engineering technology faculty and staff are passionate and driven to provide each and every student with the tools they need to succeed not only as a student, but as an engineer. Upon completion of the program, students are prepared to work on next-generation software and hardware that could be embedded in the various innovative electrical devices. I am confident that a graduate of the computer engineering technology program will be armed with incomparable engineering, communication, and life skills needed to succeed.”

—Jeffrey Gurbacki, fifth-year computer engineering technology student
Electrical Engineering Technology

what you’ll study

FIRST AND SECOND YEARS
First Year Writing
Year One: College Experience
Calculus A, B, C
DC Circuits w/ Lab
Digital Fundamentals w/ Lab
AC Circuits w/ Lab
Computational Problem Solving I
Electronics I, II w/ Lab
Microcontroller Systems w/ Lab
General and Analytical Chemistry I w/ Lab
Calculus and Differential Equations
Digital Systems Design w/ Lab
Electrical Machines and Transformers w/ Lab
General Education—Liberal Arts and Sciences
Wellness Education

THIRD THROUGH FIFTH YEARS
College Physics I
Signals, Systems, and Transforms
Communications Elective w/ Lab
Introduction to Statistics I
Career Orientation
Digital Signal Processing
Design and Innovation
Technical Electives
Engineering Economics
Control Systems
Mechanical/Manufacturing ET Elective
Technical Elective II
Transmission Lines w/ Lab
Free Electives
General Education—Liberal Arts and Sciences
Wellness Education

AUDIO OPTION
Fundamentals of Audio Engineering
Modern Audio Production
Introduction to Acoustics
Audio Power Amplifiers

TELECOMMUNICATIONS OPTION
Communications Electronics w/ Lab
Networking Technologies
Wireless RF Systems
Fiber Optics Technology

Electrical engineering technology emphasizes the practical application of leading-edge technologies to solve engineering problems and implement solutions. As electrical systems are incorporated into an increasing number of modern products, electrical engineering technology graduates are in great demand. They can pursue careers in a wide variety of industries including telecommunications, digital systems, automotive, aerospace, industrial process control, robotics, power distribution, biomedical electronics, and consumer products.

Focused yet flexible
The electrical engineering technology curriculum begins with foundation courses in circuit theory, analog and digital electronics, microprocessors, physics, calculus, and the liberal arts. In later years specialized courses delve deeper into theory and application. As you become more proficient in applications and theory, it is possible to add depth through the proper selection of electives to customize the major to meet career goals and aspirations. These may cover a wide spectrum of topics, from audio or power and energy to embedded systems, fiber optics, or radio frequency communications.

Additionally, the major shares a common first two years with the computer engineering technology major, so it is easy to switch between these two majors, if you choose.

Earn while you learn
What really gives you an edge in your career is the 12 months of paid co-op work experience that you’ll acquire before you graduate. Learn about the utilities industry as you diagnose and correct system faults in a power generation facility. Help a small electronics startup work the bugs out of a high-tech product it’s about to launch. Install and maintain complex electronic systems for a wireless cellular communication service provider. Or you might work as part of a development team for a NASDAQ 100 corporation as it modifies product specifications. Many opportunities are available, and you’ll have the chance to tailor your co-op experiences to your specific career objectives.

A wide-open career
Like all majors at RIT, the electrical engineering technology major prepares you for long-term success after graduation. Our graduates have gained employment in such areas as design engineering, product development and evaluation, power distribution, test engineering, industrial automation and control, technical sales and marketing, and project management. Our graduates often receive multiple job offers and move through increasing levels of responsibility early in their careers—a tribute to the high quality of their RIT education.

“Electrical engineering technology emphasizes the practical application of leading-edge technologies to solve engineering problems and implement solutions. As electrical systems are incorporated into an increasing number of modern products, electrical engineering technology graduates are in great demand. They can pursue careers in a wide variety of industries including telecommunications, digital systems, automotive, aerospace, industrial process control, robotics, power distribution, biomedical electronics, and consumer products.”

—Aida Al Yaaqoubi, fifth-year electrical engineering technology student

rit.edu/ect
As product designs become more complex and the demand for more efficient products increases, the divide between mechanical and electrical engineering technology decreases. There is a growing need for professionals who can combine electrical and mechanical knowledge and apply it to develop systems. The demand for professionals with this unique combination of skills has increased dramatically over the last decade. RIT’s electrical mechanical engineering technology major benefits students who want to attain a level of expertise in both disciplines.

A flexible program
The electrical mechanical engineering technology major shares a common first two years with the mechanical engineering technology and manufacturing engineering technology majors, making it easy to switch between these majors should your career plans change. Then you’ll receive a strong foundation in the electrical, mechanical, and manufacturing disciplines through courses in electricity, electronics, microprocessors, computer programming, mechanics, materials, thermal science, engineering graphics, manufacturing processes, and economic analysis. To complete your degree, you’ll choose a technical concentration in electrical systems, mechanical design, or manufacturing management. With the help of an adviser, you also may design your own concentration.

On-the-job training
Co-op work awaits you as a student in the electrical mechanical engineering technology program. Run tests on the latest diagnostic medical equipment, help refine the electronic control system for an automotive manufacturer, or work on a team tackling production efficiency issues. No matter the job, you’ll have 12 months of paid work experience under your belt when you graduate.

Integration in your future
With this broad base of technical knowledge, you can bring a variety of specialists together in the workplace. Your interdisciplinary background makes you a strong candidate for employment. When you graduate, you’ll join our successful alumni who are working as product engineers, quality assurance engineers, technical analysts, robotic designers, and more.

what you’ll study

FIRST AND SECOND YEARS
First Year Writing
Year One: College Experience
Fundamentals of Engineering
Mechanical Design and Fabrication w/ Lab
Calculus A, B
Foundations of Materials w/ Lab
DC Circuits w/ Lab
College Physics I, II w/ Labs
Effective Technical Communications
Principles of Statics
Manufacturing Processes
Multivariable Calculus and Differential Equations
AC Circuits w/ Lab
Mechanics of EMET
Electronic Amplifiers w/ Lab
Introduction to Statistics I
Computational Problem Solving I
General Education—Liberal Arts and Sciences
Wellness Education

THIRD THROUGH FIFTH YEARS
Introduction to Statistics
Automation Control Systems w/ Lab
Materials in Engineering Design w/ Lab
Microprocessor and Digital Systems w/ Lab
Electrical Machines and Transformers w/ Lab
Thermal Fluid Systems
Engineering Economics
General Chemistry for Engineers
Experimental Methods for EMET
Thermal Fluid Systems II
Process Control and Instrumentation
Free Electives
Technical Elective
MCET Thermal Fluid Systems Lab
General Education—Liberal Arts and Sciences
Cooperative Education Preparation
Cooperative Education
The environmental sustainability, health and safety major emphasizes globally sustainable approaches and prepares you to be a professional leader in moving industry and society toward a more sustainable and socially responsible future. Graduates assist various industries in producing goods and services that avoid environmental contamination, protect workers from hazardous conditions and chemicals, and utilize less energy and fewer natural resources. Students are prepared to eliminate, reduce, and control the release of pollutants into the environment and to manage health and safety hazards associated with an organization’s activities, products, and services.

**Graduates in demand**
ESHS graduates develop solutions for real-life environmental, health and safety problems, and drive organizations toward environmental sustainability. Whether you enter the workforce immediately after graduation or pursue an advanced degree, you will be in demand. More than 90 percent of our students are employed in the field within three months of graduation, working at environmental protection organizations, Fortune 100 companies, environmental consultancies, universities, and government agencies such as the EPA, OSHA, and NYSDEC. Graduates have also earned advanced degrees at top universities. You may also choose to combine your BS degree with an MS degree in our five-year, dual-degree program.

**Field work, research, and problem solving**
You will gain a diverse skill set based on a strong foundation in basic sciences: applied environmental, health and safety science and technology; sustainability and social responsibility; and the basic tools of team building, effective communication, and leadership. Both classroom assignments and projects, combined with field trips and outdoor labs, create a diverse learning environment where you will gain knowledge in real environmental and industrial settings.
A campfire classic became the subject of a senior design project in the Production Systems Design course. The Robotic S’more Maker, designed and built by mechanical and manufacturing engineering technology students, featured a conveyor system, heating guns, robotic arms, pneumatic systems, and multiple sensors—all of which built s’mores for guests attending the 2015 Imagine RIT: Innovation + Creativity Festival. Grippers moved the ingredients—graham crackers, marshmallows, and chocolate—along a conveyor belt, where the gooey treats were heated and assembled. Once completed, each s’more was placed in a paper package designed by packaging science students.

## Manufacturing Engineering Technology

rit.edu/mmet

Global competition and new technologies are driving the demand for industrial productivity. Improved productivity has led rapidly to new processes and equipment and increased levels of automation. This has created a demand for professionals well versed in advanced manufacturing technologies and environments.

### A focus on productivity

The manufacturing engineering technology major shares a common first two years with the mechanical engineering technology and electrical mechanical engineering technology majors, making it easy to switch between these majors should your career plans change. The curriculum includes a balance of professional studies featuring traditional and nontraditional manufacturing processes. Technology, whether in the development, integration, or implementation stages, is a focal point of the major. Extensive experience is gained in focused laboratory activities.

### On-campus resources

This major is dedicated to helping worldwide manufacturers compete globally through applied technology and training. You’ll have the opportunity to work on industry projects provided by the many manufacturers who work with the program on implementing new manufacturing technology.

The manufacturing engineering technology major has several well-equipped, advanced laboratories. These include a state-of-the-art manufacturing processes lab and computer-controlled machines, an automated manufacturing lab with robots and machine visions systems, and a controls lab with Ethernet PLC systems and human-machine interface systems. You gain extensive experiential learning opportunities in these facilities.

Through Center for Electronics Manufacturing and Assembly (CEMA), you can focus on electronics manufacturing and gain an understanding of manufacturing processes: how a product is produced, how to balance quality and production time, and determine the most efficient means of production.

### Manufacturing leadership starts with co-op

Manufacturing engineering technology students complete 12 months of co-op work and get paid, professional experience in their field before they graduate. You might work for a small manufacturer, designing and building a robot to perform assembly tasks. You might work for a company like Boeing, working on a team to set up a production line for a new high-performance aircraft. Or you might establish quality-control procedures for a company like General Electric.

### Wide-ranging career opportunities

Career opportunities exist in production/process engineering, quality control, manufacturing system design, robotics, operations management, advanced materials processing, research and development, applications engineering, marketing, and more. Or you may choose to continue your education with our MS degree in manufacturing and mechanical systems integration.
Mechanical engineering technology involves understanding how machinery works—and how to design, make, or utilize it better. From turbines and engines to high-performance automobiles, jet aircraft, and air-conditioned environments, mechanical engineering technology has played a pivotal role in the development of modern civilization. Today, competitive pressures and advancing technologies are forcing companies to improve and update manufacturing processes and product designs more rapidly than ever before.

As a mechanical engineering technology graduate, you’ll apply mathematics and science to the solution of design problems and the operation and testing of mechanical systems. There are opportunities to improve manufacturing techniques, create robots, increase fuel efficiency and power output, streamline aerodynamics, and design and develop new products.

**A project-oriented curriculum**

As a mechanical engineering technology student, you’ll study the foundations of mechanics, materials, and energy. In the early semesters, you’ll concentrate on developing skills in mathematics, materials technology, and computer-aided design and drafting. Later courses focus on mechanical design and applied thermofluid engineering. The major emphasizes the development of a design methodology, so a substantial amount of laboratory work is required.

Choose from among technical elective concentrations available in product design; heat, power, and HVAC systems; or plastics processing. Custom sequences can be developed with department approval.

**Gain progressive, practical experience**

Pick an industry and you’ll probably find an RIT mechanical engineering technology co-op student working there. With your broad base of knowledge and your hands-on experience with sophisticated engineering workstations, you will be in demand. With your strong applied knowledge you will be able to make immediate contributions regardless of what industry you choose to enter. Twelve months of co-op work experience provide you with a variety of experiences and enable you to make informed choices about your career.

**After graduation**

Mechanical engineering technology graduates work in a variety of industries that manufacture or use mechanical systems. They are prepared for professional careers in machine design, field service engineering, technical sales, thermal analysis, applied product design, utilities operations, HVAC design, and plant operations.
From spaghetti sauce to televisions to medicine to nuclear materials, the packaging used to hold and transport items is nearly as important as the contents themselves. The American Packaging Corporation funds RIT’s Center for Packaging Innovation, which conducts applied research, industrial training, and education with a particular focus on sustainability. This includes efforts to develop and test green materials such as biodegradable polymers and recyclable plastics. The center has also partnered with other organizations, including a collaboration with NASA to develop flexible protective packaging for critical space hardware.

Packaging Science

rit.edu/packaging

Packaging is, literally, everywhere. Packages keep items fresh, communicate warnings and instructions, and protect products, as well as make them easy to use and appealing to consumers. Because almost every company in modern society creates or uses some type of packaging, there is a tremendous need for professionals who can balance the huge demand for packaging with its environmental impact.

Enter packaging scientists. These professionals face challenges such as how to safely store and efficiently ship products, increase sales based on item presentation, and develop packing materials that won't harm the environment. RIT’s packaging science major teaches you how to tackle these issues from all angles.

**In step with industry**

RIT is one of a handful of universities that offers a bachelor’s degree in packaging science. The curriculum, developed in conjunction with the packaging science industry, offers courses in a wide range of subjects, including math, science, materials, the environment, design, and the liberal arts. You’ll also have access to facilities that are second to none. Located in RIT’s state-of-the-art Center for Integrated Manufacturing Studies (CIMS), our packaging science labs contain some of the most advanced packaging testing equipment in the nation. Outside the classroom, you’ll get two semesters of paid, professional cooperative education experience working for companies that make or use packaging.

**Electives complete the “package”**

As part of a packaging science major, you can take specific packaging elective courses, which center on science and engineering and have a decidedly technical bent. Also offered is a selection of management courses by RIT’s Saunders College of Business, and printing courses within our College of Imaging Arts and Sciences. You can focus on subjects such as packaging for distribution, accounting, marketing and sales, or graphics communication. Another option is working with your adviser to design a custom collection of elective courses.

**A strong career outlook**

A degree in packaging science offers you a rare opportunity to find work in just about any industry that interests you. Countless employers await you in the food, beverage, pharmaceutical, chemical, computer, electronic, and many other industries. Upon graduation, you’ll join RIT’s successful alumni who are packaging engineers, designers, scientists, analysts, researchers, sales and marketing representatives, brand managers, and environmental impact specialists working in the United States and abroad.

**what you’ll study**

**FIRST AND SECOND YEARS**
- First Year Writing
- Year One: College Experience
- Calculus A, B
- Chemistry for Engineers
- Introduction to Packaging
- Packaging Design I, II
- Chemistry of Materials
- Introduction to Organic Polymer Technology
- College Physics I, II
- Packaging Paper and Glass
- Packaging Metals and Plastics
- Introduction to Statistics
- Containers I, II
- General Education—Liberal Arts and Sciences
- Wellness Education

**THIRD THROUGH FIFTH YEARS**
- Microbiology in Health Disease
- Introduction to Statistics II
- Principles of Marketing
- Packaging for Distribution
- Packaging Regulations
- Dynamics and Protective Packaging
- Technical Communications
- Free Electives
- Food Packaging
- Printing Elective
- Packaging Electives
- Packaging for Marketing and End Use
- Packaging Supply Chain
- General Education—Liberal Arts and Sciences
- Cooperative Education
Accelerated degree programs, the Honors Program, more than 90 minors, study abroad, and research … RIT offers many opportunities for you to enrich your education beyond academics and expand your undergraduate experience.

Accelerated dual-degree options
Getting an advanced degree is one way to set yourself apart from the crowd. RIT offers a number of accelerated dual BS/MS and BS/MBA degrees that allow you to earn a bachelor’s degree and a master’s degree, or MBA, in five years of study. Consider these accelerated dual-degree programs:

• BS in Computer Engineering Technology/MS in Computer Science
• BS in Electrical Mechanical Engineering Technology/MS in Mechanical Systems Integration
• BS/MS in Environmental Health and Safety Management
• BS in Manufacturing Engineering Technology/MS in Mechanical Systems Integration
• BS in Mechanical Engineering Technology/MS in Manufacturing Systems Integration

Innovation and entrepreneurship—a university-wide initiative
RIT has long been a center for innovation, creativity, and entrepreneurship. The range of activities and facilities is extensive and includes:

• RIT Innovation Hall of Fame
• Simone Center for Student Innovation and Entrepreneurship
• Venture Creations
• Student Incubator
• RIT Business Incubator
• Tiger Tank Annual Student Competition
• RIT 48: Entrepreneurial Boot Camp
• Entrepreneurs Hall—a residential community devoted to entrepreneurship

Study Abroad
RIT’s Study Abroad program enhances your understanding of other cultures. You may study full time in RIT-affiliated programs in more than 20 countries around the world. You can elect to study courses in your major, or fulfill liberal studies classes while gaining the experience of living and learning in a culture different from your own. Learn more at rit.edu/studyabroad.

Honors Program
The Honors Program admits approximately 150 entering freshmen each year. The Honors Program features several distinctive and complementary components:

• Honors courses
• Research and professional development
• Complementary learning experiences (annual volunteering and community service projects)
• Honors advising and mentoring
• Honors residence
**Minors and immersions** can give you a secondary area of expertise or the chance to explore other areas of interest. They may complement your major, broaden your career options, or expand your personal interests. For the most current list of minors and immersions please visit rit.edu/minors and rit.edu/immersions.

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Minors ▲ Immersion ▲
The necessary elements of a satisfying and rewarding educational experience are cutting-edge academic programs, outstanding faculty, and first-rate facilities—all of which you’ll find at RIT. In today’s world, however, that’s not enough. You also need to find a way to make your education “real.” To successfully face the challenges that await you upon graduation, you must prove your ability to tackle real-world problems and operate in real-world settings.

Through varied experiential learning opportunities and our renowned cooperative education program, RIT helps you “keep it real.”

Value-added learning
Simply translated, experiential education means learning by doing. These initiatives put classroom lectures and textbook theories to the test, all the while letting you hone an overall sense of direction and purpose.

The College of Applied Science and Technology’s majors provide students with a full array of experiential learning opportunities.

A few to consider:

• Work with faculty and industry on applied research generated through RIT’s Center for Integrated Manufacturing Studies or Center for Electronics Manufacturing and Assembly.

• Team with students from RIT’s eight other colleges on projects that propel your skills to the next level even as they cement lifelong friendships.

• Participate in the study abroad program, living and learning in another culture.

COOPERATIVE AND EXPERIENTIAL EDUCATION:
Your successful career begins with us at RIT.

rit.edu/oce

Work while you learn
Cooperative education is perhaps the most extensive and intensive of experiential education experiences at RIT. Co-op is full-time, paid work experience directly related to your course of study and career interests. In addition to gaining professional work experience and developing a critical network of contacts, co-op is often the best way to develop the necessary business success skills—leadership, decision-making, communication, professionalism, flexibility, and independence.

Experience that pays
Besides being a great way to gain professional experience, co-op also provides you with a salary—real income that you can apply toward tuition, books, and living expenses. Many students received permanent job offers from their co-op employers. What’s more, no tuition is charged for the semesters you are employed as a co-op student.

How it works
RIT’s Office of Career Services and Cooperative Education offers instructional materials, workshops, and access to thousands of job postings and employer contacts to help you through the entire work preparation and job search process.
A coordinator assigned to your academic major will work with you one-on-one to achieve your employment and career goals, as well as complete co-op assignments. All you need are an open and inquisitive mind and a passion for exploring and developing your career interests.

**Office of Career Services and Cooperative Education**

www.rit.edu/oce

- Ranked by *The Princeton Review* in the Top 10 for career services, the office provides centralized “one-stop” career services for RIT students and alumni.
- More than 10,000 positions are posted through the office and more than 5,000 on-campus interviews are conducted annually.
- More than 2,200 employers partner with the office to access the more than 3,000 graduates and 4,300 co-op students that are produced each year.
- The office utilizes cutting-edge technology to make its services and critical career-related content available to students and alumni at their convenience.

**MORE THAN**

100

YEARS OF CO-OP

FOURTH OLDEST AND ONE OF THE LARGEST CO-OP PROGRAMS IN THE WORLD

Hundreds of employers—from Fortune 500 firms to smaller, privately owned companies—come to campus each year to recruit students for co-op and permanent work positions. Recent employers include:

- Anaren Microwave
- Boeing Corporation
- Borg Warner
- Cisco
- Cummins Engine
- Exelis
- General Electric
- General Motors
- Harris
- Keurig Green Mountain
- Knorr-Bremse Group
- LaBella Associates
- Langan Engineering & Environmental Services
- MOOG
- Northrup Grumman
- NYS Department of Transportation
- Ortho Clinical Diagnostics
- Tesla Motors
- Toyota
Amanda Bao, assistant professor of civil engineering technology, conducted research that showed a 180-degree shift in the direction of the H-steel pile foundations in bridges could add new life to the structure and increase load resistance and capacity—even in the event of earthquakes or tsunamis. Bao, a former bridge structural engineer at Jacobs Engineering Group, Inc., and Michael Baker Corporation, is an expert in seismic behavior of bridges. She teaches structural engineering courses including structural analysis, dynamics, structural loads and systems, steel design, reinforced concrete design, and timber design.

Elizabeth M. Dell, associate professor of manufacturing and mechanical engineering technology, organizes educational and mentoring activities for female students, including professional development workshops that address barriers female students face in pursuing careers in the technical or STEM disciplines. Her current research interests include the characterization of biodegradable plastics, environmental considerations in materials selection for product design, and characterization and failure analysis of polymer-based products and materials.

Robert Garrick, associate professor of manufacturing and mechanical engineering technology, is a 2015 recipient of the Eisenhart Award for Outstanding Teaching. He was recognized for his work on the Technology Rich Interactive Learning Environment classroom, also referred to as TRILE. Garrick led the development of the interactive classroom as well as research on its effectiveness, including the influence TRILE has had on collaborative learning.

Drew Maywar, associate professor of electrical, computer, and telecommunications engineering technology, conducts cutting-edge research in photonics—the science of transmitting data via light impulses. Photonics is necessary for highly sophisticated fiber optical network systems, from smartphones and the internet to fighter jets. Maywar was part of the team at Lucent Technologies that developed the terabit-per-second fiber-optic communications system that anchors the global cellular and wireless networks used worldwide every day. He is a Fulbright Scholar, speaks Japanese, and is an editor of the Japanese Journal of Applied Physics.

Shola Olabisi, assistant professor of electrical, computer, and telecommunications engineering, previously worked for GE Transportation as an electric machine design engineer. His research focuses on electric machine design and application, multifactor stress aging of insulation and dielectrics, and pulsed power and energy systems. He is an active member of the Institute of Electrical and Electronics Engineers (IEEE), Eta Kappa Nu (Electrical Engineering Honor Society), American Association for the Advancement of Science (AAAS), Alliance for Graduate Education and the Professoriate (AGEP), and the National Society of Black Engineers (NSBE).

Karen Proctor, professor of packaging science, worked as a packaging professional at Xerox Corporation and Amway Corporation. Her areas of expertise include distribution, process control, sustainable packaging innovation, and packaging at the point of purchase. Proctor currently serves as the educational vice president for International Safe Transit Association, and is developing sustainable packaging standards for the Wal-Mart supply chain. Her research interests include expanding and developing packaging-related research projects focused on sustainability.

S. Manian Ramkumar, professor of manufacturing and mechanical engineering technology, also serves as the director of the Center for Electronics Manufacturing, an academic research lab that offers research services, failure analysis, training, process development, consulting, and laboratory rental space to the electronics packaging industry. His work focuses on surface mount electronics packaging, automation, PLC controls and systems integration, web-based laboratory experimentation and control, and robotics and automated systems.
**FOUNDED IN 1829.** Rochester Institute of Technology is a privately endowed, coeducational university with nine colleges emphasizing career education and experiential learning.

**THE CAMPUS** occupies 1,300 acres in suburban Rochester, the third-largest city in New York state. RIT also has international campuses in Eastern Europe and Dubai.

**THE RIT STUDENT BODY** consists of approximately 15,400 undergraduate and 3,200 graduate students. Enrolled students represent all 50 states and more than 100 countries. Nearly 3,200 students from diverse racial and ethnic backgrounds are enrolled on the main campus along with approximately 2,700 international students. An additional 1,760 students are enrolled at RIT’s international campuses.

**RIT** is an internationally recognized leader in preparing deaf and hard-of-hearing students for successful careers and work with hearing students on the RIT campus. Deaf and hard-of-hearing students for successful careers and work with hearing students on the RIT campus. Additional 1,760 students are enrolled at RIT’s international campuses.

**RIT ALUMNI** number more than 118,000 worldwide.

**COORDINATE EDUCATION** provides paid career-related work experience in many degree programs. RIT has the fourth-oldest and one of the largest cooperative education programs in the world, annually placing more than 4,300 students in more than 5,700 co-op assignments with more than 2,200 employers across the United States and overseas.

**COLLEGES:**
- College of Applied Science and Technology
- School of Engineering Technology
- School of International Hospitality and Service Innovation
- Saunders College of Business
- B. Thomas Golisano College of Computing and Information Sciences
- Kate Gleason College of Engineering
- College of Health Sciences and Technology
- College of Imaging Arts and Sciences
- School for American Crafts
- School of Art
- School of Design
- School of Film and Animation
- School of Media Sciences
- School of Photographic Arts and Sciences
- College of Liberal Arts
- National Technical Institute for the Deaf
- College of Science

**Other degree-granting academic units:** School of Individualized Study; Golisano Institute for Sustainability

**DEGREES:** RIT offers the following degrees: doctoral (Ph.D.) programs in astrophysical sciences and technology, color science, computing and information sciences, engineering, imaging science, mathematical modeling, microsystems engineering, and sustainability; master’s degree programs: master of architecture (M.Arch.), master of business administration (MBA), master of engineering (ME), master of fine arts (MFA), master of science (MS), and master of science for teachers (MST); bachelor’s degree programs: bachelor of fine arts (BFA) and bachelor of science (BS); and associate degree programs: A5, AOS, AAS.

**WALLACE LIBRARY** is a multimedia center offering a vast array of resource materials. The library provides access to more than 250 electronic databases, 40,000 electronic journals, and more than 150,000 e-books. Resource materials also include audio, film, and video titles and more than 500,000 books and print journals.

**HOUSING:** Many of RIT’s full-time students live in RIT residence halls, apartments, or townhouses on campus. On-campus fraternities, sororities, and special-interest houses are also available. Freshmen are guaranteed housing.

**STUDENT ACTIVITIES:** Major social events and activities are sponsored by the College Activities Board, Residence Halls Association, sororities, fraternities, and special-interest clubs of many kinds. There are more than 300 clubs and student organizations on campus.

**ATHLETICS:** Men’s Teams—baseball, basketball, crew, cross country, ice hockey (Division I), lacrosse, soccer, swimming, tennis, track, and wrestling

Women’s Teams—basketball, crew, cross country, ice hockey (Division I), lacrosse, soccer, softball, swimming, tennis, track, and volleyball

**RIT** offers a wide variety of activities for students at all levels of ability. More than 50 percent of our undergraduate students participate in intramural sports ranging from flag football to golf and indoor soccer. Facilities include the Gordon Field House, featuring two swimming pools, a fitness center, indoor track, and an event venue with seating for 8,500; the Hale-Andrews Student Life Center, with five multipurpose courts, eight racquetball courts, and a dance/aerobics studio; the Ritter Ice Arena, and outdoor facilities including an all-weather track, tennis courts, and several athletic fields. The newly opened Gene Polisseni Center, which houses RIT’s new hockey arena, accommodates 4,300.

**VISITS TO CAMPUS** are encouraged and may be arranged in advance by calling 585-475-6631. Deaf and hard-of-hearing students may arrange campus visits by calling 585-475-6700, toll free in the U.S. and Canada at 866-644-6843, or by videophone at 585-743-1366.

**HOME PAGE:** www.rit.edu

**EMAIL:** admissions@rit.edu

**UNIVERSITY COLORS:** Orange and brown

**UNIVERSITY MASCOT:** Bengal tiger “Ritchie”

**UNIVERSITY ATHLETIC TEAMS:** Tigers

**RIT** does not discriminate. RIT promotes and values diversity within its workforce and provides equal opportunity to all qualified individuals regardless of race, color, creed, age, marital status, sex, gender, religion, sexual orientation, gender identity, gender expression, national origin, veteran status, or disability.

The Advisory Committee on Campus Safety will provide, upon request, all campus crime statistics as reported to the United States Department of Education. RIT crime statistics can be found at the Department of Education website, http://ope.ed.gov/security, and by contacting RIT’s Public Safety Department at 585-475-6620 (v/tty).

**RIT** is a registered trademark of Rochester Institute of Technology.