WHY ISE

As an industrial and systems engineer, you’ll study complex systems and look for simplifying solutions across all environments and fields of study, including manufacturing, management, health systems and social sciences.

Your time could be spent at a hospital developing ways to decrease waiting time in the emergency room, in a manufacturing facility working on quality assurance or consulting at amusement parks.

Strong industry ties allow our ISE program to balance theory and practical knowledge for the practice of the profession or for advancement to a variety of academic foci, including electronic packaging and manufacturing, healthcare operations management, production systems, supply chains, human factors engineering and automation.

Our ISE program is structured to serve both full- and part-time graduate students.

RESEARCH AREAS

Manufacturing
- Manufacturing Process Control and Design
- Neural Network Modeling
- Quality
- Reliability
- Simulation
- Supply Chain Modeling and Management
- System Optimization

Artificial Intelligence and Expert Systems
- Applied Statistics and Design of Experiments
- Computer Integrated Manufacturing
- Data Mining
- Electronics Packaging and Manufacturing
- Healthcare Systems
- Human Factors and Ergonomics

WHICH DEGREE IS RIGHT FOR ME

When considering your master’s degree, give serious consideration to what your future plans are for obtaining your degree and the amount of time you want to spend obtaining it. This should help you decide on pursuing either a thesis or a non-thesis degree.

REQUIREMENTS

Masters in Industrial and Systems Engineering (MS ISE)

Students must complete the required courses while maintaining at least a B average.

Curriculum and Sample Schedule

Fall
- SSIE 505, Applied Probability and Statistics
- SSIE 510, Enterprise Systems Engineering
- Two electives*

Spring
- SSIE 520, Modeling and Simulation
- SSIE 561, Quality Assurance for Engineers
- Two electives*

*At least one elective must be at the 600 level.

Thesis option: 6 credits of thesis work followed by oral presentation and defense.

Non-thesis option: With departmental approval, the thesis requirement may be replaced by two approved elective courses and a project of at least 3 credits.

Course descriptions are available in the University Bulletin at bulletin.binghamton.edu.

PhD in Industrial and Systems Engineering (PhD ISE)

Degree requirements include:

- satisfaction of the learning contract, including proficiency in teaching and residence requirements
- satisfaction of the comprehensive qualifying requirement
- presentation of a colloquium on proposed research
- acceptance of a prospectus outlining dissertation research
- defense of a dissertation at oral examination

MS ISE:

A health systems concentration is also available. Contact the graduate director to learn more about this track.

An executive program with a health systems concentration, in Manhattan, is also available.

One-year non-thesis option: Can be completed in three semesters — fall, spring and summer — with approval of the graduate director.
ABOUT THE SSIE DEPARTMENT

The Department of Systems Science and Industrial Engineering has 10 faculty members and approximately 211 undergraduate, 95 master’s and 72 doctoral students. We offer the BS degree in industrial and systems engineering (ISE), MEng degree in industrial engineering (IE), MEng degree in systems engineering (SE) and MS and PhD degrees in both systems science and ISE.

FACULTY AND RESEARCH

The SSIE department has secured more than $2.9 million in research funding in 2011-12. Our faculty works collaboratively with more than 24 sponsors from industry and federal agencies. The department’s reputation is rapidly expanding. We have already gained international recognition in the electronics manufacturing and packaging area and are now gaining rapid growth in health systems, working with such major hospital systems as United Health Services, Virtua Health, Upstate University Hospital and Montefiore Medical Center. In addition, Binghamton University, as part of its five-year strategy, has identified natural sciences, healthcare systems and smart energy as major areas of interest.

EARN YOUR GRADUATE DEGREE REMOTELY

EngiNet, the Watson School’s Graduate Distance Learning Program, uses software to digitally capture both classroom lectures and presentation materials. The lectures are posted on the course management system. Students use the online media in conjunction with course materials posted on each course website. Online files are usually posted within 24 hours of being recorded.

For additional information about courses, tuition or registration, send an e-mail to jkinzer@binghamton.edu or call 607-777-4965 (toll free 1-800-478-0718).

FOR MORE INFORMATION

ISE Graduate Director, Dr. Mohammad Khasawneh: mkhasawn@binghamton.edu

ABOUT THE WATSON SCHOOL

With an innovative curriculum and real-world approach, the Thomas J. Watson School of Engineering and Applied Science at Binghamton University prepares engineering and computer science students to embrace new challenges and create the future.

The Watson School offers bachelor’s, master’s and doctoral programs in eight fields of study including bioengineering, biomedical engineering, computer science, computer engineering, electrical engineering, industrial and systems engineering, mechanical engineering and systems science. For all students, the Watson School experience is characterized by a special blend of creative thinking, professional opportunities and a focus on finding solutions to real problems.

Located in Binghamton, N.Y., we’re ideally situated in the high-tech heart of the state. Industry partnerships, class projects and internship opportunities provide a wealth of hands-on experience for graduate and undergraduate students alike.

Our faculty brings considerable industry and research expertise to the classroom, where they mentor students as individuals in small classes. In the lab, they encourage student involvement and make breakthrough discoveries.

Students come to the Watson School from all over the country and the world, and they represent a wide range of backgrounds and interests. They graduate with broad-based skills and the entrepreneurial spirit to succeed in a variety of fields. We’re eager to tell you more about the Watson School experience. Contact us for more information, or apply today!

STUDENT CLUBS AND ORGANIZATIONS

Alpha-Pi-Mu Honor Society
Institute of Industrial Engineers (IIE)
Society of Hispanic Professional Engineers

A full listing of student groups is available at binghamton.edu/watson/about/clubs-and-orgs.html.