GRADUATE DEGREES IN INDUSTRIAL AND SYSTEMS ENGINEERING

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 electronics packaging and manufacturing, healthcare operations management, production systems, supply chains, human factors engineering and automation, supply chain management and logistics, and data science.

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

RESEARCH AREAS
- Data Science and Analytics
- Healthcare Systems Engineering
- Electronics Packaging and Manufacturing
- Flexible Electronics
- 3D Printing (Additive Manufacturing)
- Smart Energy
- Supply Chain Modeling and Management
- Artificial Intelligence and Expert Systems
- Computer Integrated Manufacturing
- Human Factors and Ergonomics
- Manufacturing Process Control and Design
- Quality and Reliability
- System Optimization and Simulation
- Applied Statistics and Design of Experiments

WHICH DEGREE IS RIGHT FOR YOU?
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
- SSIE 505, Applied Probability and Statistics
- SSIE 510, Enterprise Systems Engineering
- SSIE 520, Modeling and Simulation
- SSIE 553, Operations Research
  or
- SSIE 561, Quality Assurance for Engineers
- Four electives (at least one at the 600 level)

Thesis option: 8 graduate courses and 6 credits of thesis work followed by oral presentation and defense.
Non-thesis/Project option: 9 graduate courses and a project of at least 3 credits with presentation and defense.

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 and acceptance of a prospectus outlining dissertation research
- submission of a dissertation, and
- defense of a dissertation at oral examination

SPECIALIZED CONCENTRATIONS OR CERTIFICATES AVAILABLE
A health systems concentration — contact the graduate director to learn more about this track.
An executive program with a health systems concentration, in Manhattan.
One-year non-thesis option: Can be completed in three semesters — fall, spring and summer — with approval of the graduate director.
Specialized studies in complex systems and/or electronics packaging.

Course descriptions are available in the University Bulletin at bulletin.binghamton.edu.
ABOUT THE SSIE DEPARTMENT

The Department of Systems Science and Industrial Engineering has approximately 18 faculty members and approximately 250 undergraduate, 250 master’s and 135 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 $3 million in research funding annually. Our faculty work collaboratively with more than 30 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 experiencing rapid growth in health systems, working with major hospital systems, such as United Health Services, Mount Sinai Health System and Montefiore Medical Center. In addition, Binghamton University, as part of its five-year strategic plan, has identified health systems and smart energy as two of its 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 enginet@binghamton.edu or call 607-777-4965 (toll free 1-800-478-0718).

FOR MORE INFORMATION

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BINGHAMTON.EDU/SSIE

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 seven fields of study including 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 and System Engineers (IISE)
Society of Hispanic Professional Engineers

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