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.

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

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.

Course-only completion: students may complete their graduate program with successful completion of at least 10 approved graduate level courses.

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.

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

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
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.

Specialized studies in complex systems and/or electronics packaging are also available.

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, 200 master’s and 100 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 $2.5 million in research funding annually. Our faculty work collaboratively with more than 25 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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