

SYSTEMS SCIENCE AND INDUSTRIAL ENGINEERING (SSIE)

WHY SSIE?

In our complex society, you need to make effective decisions in the presence of complexities across all environments and fields of study including manufacturing, management, health systems, social sciences and systems science.

So your studies in SSIE could be spent at a hospital developing ways to decrease wait time in emergency rooms, in a manufacturing facility working on quality assurance issues, consulting at amusement parks, analyzing systems, and beyond.



UNDERGRADUATE DEGREES

Industrial and Systems Engineering

The Bachelor's Degree in Industrial and Systems Engineering (BS ISE) prepares students for employment in areas including health systems, production and management, ergonomics and safety, engineering management, operations research, statistics and quality control, information technologies, and electronics and solar power assembly and reliability. Students enter through the common first-year engineering program within the Engineering Design Division.

The BS in ISE is specially structured for transfer students from any of the Two-Year Engineering Science Association (TYESA) community colleges in New York state.

Our 4+1 program allows qualified undergraduates to complete requirements toward a master's degree in either systems science (SS) or in industrial and systems engineering (ISE) in five years. A similar program is in place for an advanced degree from the School of Management.

The BS program is accredited by the Engineering Accreditation Commission of ABET, abet.org.

GRADUATE DEGREES

Master of Science Programs

The Master of Science in Industrial and Systems Engineering (MS ISE) provides a balance of theory and practical knowledge for the practice of the profession or for advancement to a doctoral program. Thesis and/or project activity may be carried out in industrial laboratories with faculty advising.

The Master of Science in Systems Science (MS SS) applies systems concepts, principles and methods to understand the nature of systems problems, and tackle actual systems problem solving. Students delve into systems modeling and simulation, systems design and the simplification of complex systems to make them manageable. This program welcomes students with a baccalaureate degree in any field.

A health systems concentration is available in both MS programs. It is geared for professional or leadership roles in healthcare areas including hospital operations management, health systems engineering, bio-technology, pharmaceuticals, medical devices, health information technology, consulting and health policy.

The executive program in health systems, in Manhattan, is another option that allows the student to earn a degree with a health systems concentration within twelve months. Classes meet in a convenient location in midtown Manhattan, generally on Saturdays.

Master of Engineering Programs

The Master of Engineering in Industrial Engineering (MEng IE) equips graduates to be effective in industry and provides a balance of theory and practical knowledge for the practice of the profession.

The Master of Engineering in Systems Engineering (MEng SE) is intended for individuals who are working full-time and attending graduate school part-time. Systems Engineering is an interdisciplinary approach and means to enable the realization of successful systems.

PhD Programs

The PhD programs in Industrial and Systems Engineering (ISE PhD) and Systems Science (SS PhD) offer research topics including optimization, human factors/ergonomics, supply chain management, health systems, enterprise systems, intelligent systems, electronics manufacturing processes, fuzzy logic and biosystems.



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.

INDUSTRIAL ADVISORY BOARD

The SSIE department works closely with its Industrial Advisory Board to draw on the knowledge and expertise of high-level professionals who come from a broad spectrum of local industries and a wide range of employers, providing a broad perspective on the trends and needs of industry.

EARN YOUR GRADUATE DEGREE REMOTELY!

EngiNet — the Watson School's Graduate Distance Learning Program — uses software to 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 digitally captured.

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

FIND OUT MORE

For more information about degree programs or related opportunities at Binghamton University:

Systems Science and Industrial Engineering: ssie.binghamton.edu

University Bulletin: bulletin.binghamton.edu

Watson School Advising: binghamton.edu/watson/advising

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[BINGHAMTON.EDU/SSIE](http://binghamton.edu/ssie)

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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 Engineers (IIE)

Society of Hispanic Professional Engineers

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