

State University of New York at Binghamton
Thomas J. Watson School of Engineering and Applied Science
BS in Industrial and Systems Engineering-Four-Year Program

Application Code: 1367

If undecided use: 0229

FALL 2017

ENGINEERING DESIGN DIVISION

(The freshman year is common to all engineering majors)

Fall

Math 224/225 Calculus I (M)
 CHEM 111
 WTSN 103 Engineering Communications I
 WTSN 111 Intro to Engineering Design
 General Education Elective (G, P, A, N, H)
 Body/Wellness (Y, S, B)

Spring

Math 226/227 Calculus II (Calc I)
 PHYS 131 General Physics I
 WTSN 104 Engineering Communications II (WTSN 103)
 WTSN 112 Intro to Engineering Analysis (WTSN 111)
 General Education Elective (G, P, A, N, H)
 Body/Wellness (Y, S, B)

Note: the GenEd "J" Designation is earned after successful completion of WTSN 111, 112, 103, 104

Final three years of Industrial and Systems Engineering Major

Year 2

Fall

Math 324 Ordinary Diff Equations (Calc II, Phys I)
 or
 Math 323 Calculus III (4)
 PHYS 132 General Physics II (4) (Phys I, Calc II)
 ME 273 Statics (3) (Phys I, Calc II)
 ISE 231 Human Factors (4) (Calc II)
 ISE 295 Seminar Course (1)

Total 16

Spring

Math 304 Linear Algebra (4) (Calc I)
 ISE 211 Engineering Economics (4)
 ISE 212 Engineering Computing (4)
 ISE 261 Probabilistic Systems I (4)

Total 16

Year 3

Fall

ISE 311 Enterprise Systems (4) (ISE 211)
 ISE 314 Computer Program for Engineers (4)
 ISE 362 Probabilistic Systems II & DOE (4)
 (ISE 261)
 ISE 370 Industrial Automation (4)

Total 16

Spring

ISE 320 Optimiz & Operation
 Research I (4) (Math 304)
 ISE 363 Quality Engineering (4) (ISE 362)
 General Education Elective (G, P, A, N, H) (4)
 General Education Elective (G, P, A, N, H) (4)

Total 16

Year 4

Fall

ISE 420 Optimiz & Operation Res II (4)
 (ISE 320)
 ISE 421 Modeling and Simulation (4) (ISE 362)
 ISE 491 Systems Engineering Design (4)
 General Education Elective (G, P, A, N, H) (4)

Total 16

Spring

ISE 492 Systems Design Project (4) (ISE 491)
 Technical Elective (ISE, ME, EECE, CS, BE) (3)
 Technical Elective (ISE, ME, EECE, CS, BE) (3)
 Technical Elective (ISE, ME, EECE, CS, BE) (3)

Total 13

Industrial and Systems Engineering (ISE)

We live in a complex society, but in the Systems Science and Industrial Engineering Department, we are doing our best to make it less complicated. We study complex systems and look for simplifying solutions. We work across all environments and fields of study including manufacturing, management, service industries, healthcare systems, and others. So, our time could be spent at a hospital developing ways to decrease wait times in emergency rooms, or you might find us in a manufacturing facility working on quality assurance issues or consulting at amusement parks, and beyond.

We have structured our BS ISE program so students will accomplish the following within a few years of graduation:

1. designing, developing, and managing both deterministic and nondeterministic complex processes and systems involving people, information, equipment, and financial and material assets, with special emphasis on using probabilistic methods, design of experiments, and simulation.
2. joining and contributing to industrial, government, and service organizations, and to operate effectively with a high level of professional and ethical standards.
3. independent learning, acquiring professional certifications and/or advanced degrees in reputable graduate schools in manufacturing, service, and enterprise systems.
4. communicating and contributing effectively in a diverse team environment.

Our BS ISE program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

The faculty members are committed to providing the students with an outstanding academic experience. Our curriculum also provides excellent preparation for graduate studies. For qualified undergraduates, we offer several combined-degree (accelerated five-year) programs that can lead to both a BS degree in ISE and an MS degree in either Industrial and Systems Engineering (MS ISE), Systems Science (MS SS), or Master of Business Administration (MBA).

For more information, visit: <http://www.ssie.binghamton.edu>