

INDUSTRIAL ENGINEERING

School of Engineering • Department of Mechanical and Industrial Engineering

Undergraduate Degree Available at SIUE

- Bachelor of Science (ABET Accredited)

Why Industrial Engineering?

Industrial engineers determine the most efficient ways to create products or services using people, machines, materials, information and energy. For example, an automobile has about 8,000 components and parts. The industrial engineer brings all these parts to the right workstations at the right time, quantity, quality and price. The goal is to operate the most efficient assembly plant possible. They use math and statistics to optimize design systems, and they use knowledge in a wider variety of applications. They deal with people as well as things, relate to the total picture of productivity improvement, and apply problem-solving techniques in almost every kind of organization imaginable. Industrial engineers bridge the gap between management and technical operations, motivating people and determining which analytical tools should be used and how to use them.

Industrial Engineering at SIUE

The program comprises an integrated sequence that includes not only fundamental courses, but also specialized courses in facilities design, production planning and control, operations research, quality control, computer-integrated manufacturing, process and product design, and tool engineering. These specialized courses reflect the impact of recent developments in operations research, information processing, and automation.

Career Outlook

Industrial engineers are prepared to be problem solvers, innovators, coordinators, and change agents in all phases of manufacturing industries, service industries, and government agencies. With 100 percent placement rate, SIUE industrial engineering graduates work at companies involved in aerospace, automotive, bio-engineering, manufacturing, mining, agriculture, power generation and distribution, textiles, and transportation. The SIUE School of Engineering has active partnerships with several St. Louis-based companies that provide exciting, challenging and well-paying internships and co-op opportunities to students.

Admission Requirements

Students admitted to programs offered in the School of Engineering shall have met the University admission requirements and the following additional School of Engineering requirements:

- completion of all Academic Development courses required by the University
- completion of any courses required to address School of Engineering high school deficiencies
- eligibility to enroll in MATH 125 – Pre-Calculus at a minimum
- maintenance of a cumulative grade point average of at least 2.0 (on a 4.0 scale)

Exit Requirements

Satisfactory completion of all university, program and departmental requirements as outlined in the undergraduate catalog.

Other Engineering Programs at SIUE

Civil Engineering*, Computer Engineering, Computer Science*, Construction Management, Electrical Engineering*, Manufacturing Engineering, Mechanical Engineering*

* graduate program also available



Faculty

Xin Chen, Ph.D.

2009 Purdue University, West Lafayette, IN

Sohyung Cho, Ph.D.

2000 Pennsylvania State University

Emmanuel S. Eneyo, Ph.D., P.E.

1991, Purdue University – West Lafayette, Indiana

Kevin Hubbard, Ph.D. CMfgE

1993, Missouri University of Science and Technology

S. Cem Karacal, Ph.D. (Associate Dean)

1991, Oklahoma State University

H. Felix Lee, Ph.D.

Program Director

1989, University of Michigan

Hasan Sevim, Eng. Sc.D. (Dean)

1984, Columbia University, New York

Sample Four-Year Curriculum (See Undergraduate Catalog for Additional Information)

FALL

SPRING

LOWER-DIVISION COURSES (Pre-engineering)

IME 106 Engineering Problem Solving (3) or **PHIL 106**
 CHEM 131 Engineering Chemistry (INSM) (4) or **CHEM 121**
 CHEM 135 Engineering Chemistry Lab (1) or **CHEM 125A**
ENG 101 English Composition I (3)
MATH 150 Calculus I (INSM) (5)
 Total 16

ENG 102 English Composition II (3)
MATH 152 Calculus II (DNSM) (5)
PHYS 151 University Physics I (4)
PHYS 151L University Physics Lab I (1)
 SPC 103 Interpersonal Communication Skills (IGR) (3)
 Total 16

CE 204 Engineering Graphics & CAD (3)
CE 240 Statics (3)
MATH 250 Calculus III (4)
PHYS 152 University Physics II (4)
PHYS 152L University Physics Lab II (1)
 Introductory Fine Arts & Humanities (3)
 Total 18

CE 242 Mechanics of Solids (3)
CS 145 Introduction to Computing for Engineers (3) or **CS 140**
ECE 210 Introduction to Electrical Circuits (3)
MATH 305 Differential Equations I (3)
ME 262 Dynamics (3)
ECON 111 Principles of Macroeconomics (ISS) (3)
 Total 18

Admission to upper-division courses requires satisfactory completion of lower-division core courses (see catalog for specific requirements).
 An "APPLICATION FOR ADMISSION TO UPPER-DIVISION ENGINEERING COURSES" form must also be completed and approved.

UPPER-DIVISION COURSES

IME 365 Quantitative Methods in Engineering (3)
 IME 370 Manufacturing Processes (3)
 IME 375 3-D Modeling in Product Design (3)
 IME 335 Intro to Info Processing (3)
 IME 345 Engineering Economic Analysis (3)
 PYSC 320 Intro to Industrial/Org. Psych (3)
 Total 18

IME 465 Design of Quality Systems (3)
 IME 470 Manufacturing Systems (3)
 IME 415 Deterministic Models (3)
 IME 451 Methods Design & Work Meas. (3)
 Intro to Fine Arts/Humanities (3)
 Total 15

IME 476 Plantwide Process Control (3)
 IME 468 Simulation (3)
 IME 483 Production Planning & Control (3)
 IME 484 Facilities Planning
 IME Industrial Engineering Elective I (3)
 Total 15

IME 490 Integrated Engineering Design (3)
 IME Industrial Engineering Elective II
 IME Industrial Engineering Elective III (3)
 PHIL 323 Engineering Ethics (3)
 Interdisciplinary Studies (IS) (3)
 Total 15

TRANSFER STUDENTS Maximize your transfer experience - complete the **bolded** courses/requirements pre-transfer **AND** satisfy the Illinois Articulation Initiative (IAI) General Ed Core or receive an AA, AS, or AAT (early childhood, special ed, or math) degree from an IAI community college. If 'Minor' requirements are shown, discuss careful course selection with the academic advising contact listed. Transfer Credit Equivalency Guides are located at siue.edu/transfer/

Academic Advising Information

School of Engineering Student Services
 Southern Illinois University Edwardsville
 Campus Box 1806, Edwardsville, IL 62026-1806
 618.650.5300
www.siue.edu/engineering/student-services

Contact Info

Industrial and Manufacturing Engineering Program
 School of Engineering
 Southern Illinois University Edwardsville
 Campus Box 1805, Edwardsville, IL 62026-1805
 618.650.3389

