

# MECHANICAL ENGINEERING

School of Engineering • Department of Mechanical and Industrial Engineering

Undergraduate Degree Available at SIUE

- Bachelor of Science (ABET Accredited)

## Why Mechanical Engineering?

Mechanical engineers play a critical role in advancing the technologies we all have come to rely on — cars are a prime example. Some mechanical engineers work to find alternative energy sources, design robots, airplanes or outer-space vehicles. Some may design more efficient heating and air-conditioning systems or create new medical devices used to save lives.

As a mechanical engineer, you can apply your creative, problem-solving abilities to a wide spectrum of possibilities.

## Mechanical Engineering at SIUE

What do rock crawling, mud bogging and mechanical engineering have in common? SIUE students. SIUE mechanical engineering students are involved in hands-on student projects that are fun and allow them to apply what they have learned. Each year, SIUE students compete in the Society of Automotive Engineers design and racing competition. The team creates a reduced-scale, off-road Mini Baja vehicle that is tested against those made by other schools around the globe. Working alongside expert faculty engaged in research and highly respected in the field, students build professional and academic networks and get connected to the latest trends and technological innovations.

## Career Outlook

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 formed active partnerships with several St. Louis-based companies, such as Boeing, provide exciting, challenging and well-paying internships and co-op opportunities for 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\*, Industrial Engineering\*, Manufacturing Engineering

\* graduate program also available



## Faculty

### Serdar Celik, Ph.D.

2007, Southern Illinois University Carbondale

### Keqin Gu (Chair), Ph.D.

1988, Georgia Institute of Technology

### Ryan Krauss, Ph.D.

2006, Georgia Institute of Technology

### Ke Li, Ph.D.

2004, Michigan Technical University

### Albert Luo, Ph.D.

1996, University of Manitoba – Winnipeg

### Majid Molki, Ph.D.

1982, University of Minnesota

### Fengxia Wang, Ph.D.

2008, Purdue University

### Xiaojun Yan, Ph.D.

1993, University of California at Davis

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

FALL

SPRING

LOWER-DIVISION COURSES (Pre-engineering)

YEAR 1

IME 106 Engineering Problem Solving (3) or **PHIL 106**  
 CHEM 131 Engineering Chemistry (INSM) (4) or **CHEM 121A**  
 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)  
**CS 145** Intro Computing for Engineers (3) or **CS 140**  
 Total 16

YEAR 2

**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)  
 Interpersonal Communications (3)  
 Total 18

**CE 242** Mechanics of Solids (3)  
**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 15

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

YEAR 3

ME 310 Thermodynamics I (3)  
 ME 350 Mechanisms (3)  
 ME 354 Numerical Simulation (1)  
 ME 370 Materials Engineering (3)  
 STAT 380 Statistics for Application (3)  
 Fine Arts and Humanity—Introduction (3)  
 Total 16

ME 312 Thermodynamics II (3)  
 ME 315 Fluid Mechanics (3)  
 ME 356 Dynamic Systems Modeling (3)  
 ME 380 Design of Machine Elements (3)  
 ME 380L Stress Laboratory (1)  
 PHIL 323 Engr. Ethics & Professionalism (3)  
 Total 16

YEAR 4

ME 410 Heat Transfer (3)  
 ME 410L Thermal Science Laboratory (1)  
 ME 482 Mechanical Engineering Design I (2)  
 ME Elective I (3)  
 IME 345 Engineering Economic Analysis (3)  
 Fine Arts & Humanity or Social Science—Intro. (3)  
 Interdisciplinary Studies (3)  
 Total 18

ME 356L Dynamic Systems Laboratory (1)  
 ME 484 Mechanical Engineering Design II (2)  
 ME Elective II (3)  
 ME Elective III (3)  
 ME Elective IV (3)  
 Social Science—Distributed (3)  
 Fundamental of Engineering Examination (0)  
 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/](http://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/studentsservices](http://www.siue.edu/engineering/studentsservices)

Contact Info

Department of Mechanical Engineering  
 School of Engineering  
 Southern Illinois University Edwardsville  
 Campus Box 1805  
 Edwardsville, IL 62026-1805  
 618.650.3389

