DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING

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Industrial Engineering Program Coordinator: Keith Thompson (Interim)
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E-mail: thompsmi@uwplatt.edu

MAJORS
Industrial Engineering
Mechanical Engineering

ABOUT THE DEPARTMENT AND MAJORS
The UW-Platteville Department of Mechanical and Industrial Engineering offers two Bachelor of Science degrees: mechanical engineering and industrial engineering. The two disciplines have complementary aspects and provide opportunities for close cooperation between them. The department’s mission is to provide an open, student-friendly environment with frequent student-faculty interaction that results in a high quality undergraduate mechanical or industrial engineering education and enables graduates to practice their profession with proficiency and integrity.

INDUSTRIAL ENGINEERING
https://campus.uwplatt.edu/ems/industrial-engineering

University of Wisconsin Platteville’s B.S. program in industrial engineering is accredited by the Engineering Accreditation Commission of ABET, https://www.abet.org.

Industrial engineering is concerned with the design, improvement and installation of integrated systems of people, materials and technology. Industrial engineers combine a knowledge of mathematics, physical science and social science with the principles and methods of engineering analysis and design. At one time, industrial engineers were employed mainly in manufacturing. Today, however, they are employed by both manufacturing and service industries, which has increased the demand for industrial engineers.

Industrial engineers are generalists rather than specialists. Therefore, the industrial engineering curriculum at UW-Platteville covers a broad range of topics related to engineering practice. It includes study in engineering science topics as well as in the major areas within industrial engineering. These areas include ergonomics, work design, facility design, inventory and production planning, quality, engineering management and continuous improvement. In addition, students are required to fulfill general university requirements in the humanities, physical sciences, social sciences and other areas. The main purpose of the industrial engineering curriculum is to prepare new engineers to practice at the frontiers of engineering knowledge and professional practice immediately after graduation.

PROGRAM EDUCATIONAL OBJECTIVES
Within four to six years after graduation, our graduates are expected to

(1) add significant value to their organizations by implementing improvements through application of system, process and management methodologies and tools
(2) provide formal and informal project, administrative or technical leadership
(3) engage in professional growth through post-graduate education, certifications and professional societies

STUDENT OUTCOMES
By graduation, students in our program are expected to attain the following student outcomes:
(1) an ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science and mathematics

(2) an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors

(3) an ability to communicate effectively with a range of audiences

(4) an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts

(5) an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives

(6) an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

(7) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

INDUSTRIAL ENGINEERING ACADEMIC STANDARDS

A 2.40 /4.00 G.P.A. must be maintained in all professional engineering courses.

GENERAL REQUIREMENTS BACHELOR OF SCIENCE DEGREE

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<th>Course</th>
<th>Title</th>
<th>Credits</th>
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MECHANICAL ENGINEERING

https://campus.uwplatt.edu/ems/mechanical-engineering

University of Wisconsin Platteville’s B.S. program in mechanical engineering is accredited by the Engineering Accreditation Commission of ABET, https://www.abet.org.

Mechanical engineers meet the needs of society in many important ways, including the creative planning, development, and operation of mechanical systems considering sustainability factors such as cost and the environment; the commercial conversion of energy to provide heat, refrigeration, and power; and the design and manufacture of consumer products that fulfill societal needs. They work in a variety of areas such as manufacturing, design, development, research, sales, and management. The BSME degree also provides an excellent background for those seeking advanced degrees in biomedical engineering, aerospace engineering, and business administration.

The main purpose of the mechanical engineering curriculum is to develop in each student a thorough understanding of fundamental theory, augmented and illustrated by practical application. It provides a balance between engineering science and engineering design, complemented with a strong liberal arts education. Faculty members are dedicated to providing students with the personal attention needed for maximum development of skills.

UW-Platteville delivers professional engineering courses to students at a distance. Students near the UW-Fox Valley may take the professional engineering courses taught by UW-Platteville personnel through a combination of face-to-face instruction and distance learning technology. They obtain the same BSME degree as students taking courses at Platteville.

Mechanical engineering promotes high impact practices. Many students earn credit by taking an internship or a cooperative education assignment. Study abroad programs and foreign exchanges are also encouraged. Students anywhere in the world may take certain professional engineering courses at UW-Platteville via distance learning technology, enabling them to progress more rapidly towards degree completion while away from campus.

PROGRAM EDUCATIONAL OBJECTIVES

Within five years after graduation, our graduates are expected to

(1) build upon and adapt knowledge of science, mathematics and engineering to solve more complex problems and take on more expansive projects that require an increased level of technical expertise, business acumen, flexible team engagement and leadership

(2) use effective communication and analytical skills within their project teams and with other stakeholders

(3) be capable and independent team members, who are aware of stakeholders within and outside of their projects and who conduct themselves ethically and professionally
STUDENT OUTCOMES
By graduation, students in our program are expected to attain the following student outcomes:

(1) an ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science and mathematics

(2) an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors

(3) an ability to communicate effectively with a range of audiences

(4) an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts

(5) an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives

(6) an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

(7) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

MECHANICAL ENGINEERING ACADEMIC STANDARDS
The requirements for entry into the mechanical engineering program are as follows:

• 12 credits or more in residence,
• Successful completion of GENENG 2130: Engineering Mechanics - Statics and MECHENG 2360: Thermodynamics,
• Cumulative GPA of 2.5/4.0 in residence.

REQUIREMENTS TO GRADUATE:
1. Completion of all university and general education requirements
2. Enrolled and in good standing in the mechanical engineering program
3. Successful completion of all required courses for the mechanical engineering major.
4. A grade point average of 2.0/4.0 in required courses for the mechanical engineering major and approved mechanical engineering technical electives. The method for computing this grade point average is identical to the method used to calculate the university grade point average.

COURSE REPEAT POLICY
Required general engineering and mechanical engineering courses may be repeated once.

GENERAL REQUIREMENTS BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING DEGREE

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MAJORS

• Industrial Engineering Major, B.S. (http://catalog.uwplatt.edu/undergraduate/engineering-mathematics-science/mechanical-industrial-engineering/industrial-engineering-bs)
• Mechanical Engineering Major, B.S. (http://catalog.uwplatt.edu/undergraduate/engineering-mathematics-science/mechanical-industrial-engineering/mechanical-engineering-bs)
• Engineering Management (http://catalog.uwplatt.edu/undergraduate/engineering-mathematics-science/mechanical-industrial-engineering/engineering-management-certificate)

FACULTY AND LECTURERS
Additional information about the Faculty and Lecturers below may be found in the Faculty and Academic Staff (http://catalog.uwplatt.edu/faculty-academic-staff) section of this catalog.

Arif, Tariq M.
Bora, Kamil C.
Campbell, Guy R.
Cummings, Antonette
Elamin, Gafar
Ghafoorianfar, Nima
Gnaneswaran, Vettrivel
Hoerning, Jeff M.
Horne, Kyle
Hussein, Mazen
Kabir, Asif K.
Kobayashi, Hirohito
Lerner, Anne-Marie
Ljumanovic, Lea
Masoom, Abulkhair M.
McLanahan, Aric L.
Melin, Scott
Meulbroek Fick, Jessica P.
Obielodan, John O.
Omwando, Thomas
Oszoy, Istemi B.
Prosise, Jodi
Roy, Bidhan
Rubino, Edoardo
Tas, Sinan
Teng, Hong
Yu, Bo
Zampaloni, Michael A.
Zolper, Thomas J.