



# Mechanical Engineering

## What is Mechanical Engineering?

Mechanical engineers meet the needs of society in many important ways, including the following:

- The use and economical conversion of energy from natural sources—falling water, coal, oil, gas, nuclear fuels, solar radiation, wind and thermal springs—into other forms to provide power, heat, light, cooling and transportation.
- The design and production of labor-saving machines.
- The creative planning, development and operation of mechanical systems for efficiently using energy, machines, and resources.
- The processing of materials into useful products.

Mechanical engineering involves almost all technological aspects of equipment and processes. Mechanical engineers serve such diverse areas as energy, mechanical systems, robotics and automation, environment, transportation, heating, ventilating, and cooling systems, bioengineering, manufacturing systems, and electronics.

## The Curriculum

The University of Wisconsin-Platteville has developed a mechanical engineering program which provides a balance between engineering science and engineering design. The purpose of the curriculum is to develop in each student a thorough understanding of fundamental theory, augmented and illustrated by practical application. Although emphasis is placed on analytical skills, each student is expected to develop sufficient technical and practical skill to be, upon graduation, of immediate value to a prospective employer and to be grounded in fundamental engineering concepts in order to grow with the future as new materials, methods, and designs develop.

## The Philosophy

The philosophy of the faculty is that all engineering students should be prepared to meet the needs of industry, government and society today and in the future. Students have the opportunity to gain knowledge and to develop mental skills, attitudes, and the personal characteristics necessary to become successful professional engineers.

This is accomplished by strongly reinforcing the basics of chemistry, mathematics and physics with the engineering sciences, followed by a sequence of engineering analysis and design courses which emphasize practical industrial experience.

As our society becomes more complex, so does the role of the engineer. The department members have thus built a curriculum around a background in the social sciences and humanities which will provide a well-rounded education to help the student become a quality citizen and a successful engineer.

## Career Opportunities

Mechanical engineering is an exciting and challenging profession for men and women. It offers outstanding opportunities and rewarding careers. Employment opportunities for mechanical engineers are expected to increase about as fast as the average for all occupations through the year 2010. Typical job titles for our graduates include design engineer, applications engineer, project engineer, and manufacturing engineer. Beginning annual salaries for UW-Platteville graduates in mechanical engineering equal or exceed national averages. Employers of recent mechanical engineering graduates include Caterpillar, Cummins, General Kinematics, General Motors, Hormel, John Deere, Kimberly-Clark, Modine, and Sundstrand.

## Faculty and Facilities

All of the mechanical engineering faculty possess Ph.D. degrees, and most are registered professional engineers. Some have published textbooks, all have published technical articles and are dedicated to providing students with personal attention needed for maximum development of skills. We do not employ graduate teaching assistants.

Facilities for the engineering students at UW-Platteville are located in Ottensman Hall. The rooms are spacious, and the laboratories match the most recent industrial standards.

## Co-op Program

The University of Wisconsin-Platteville advocates an education in which students combine classroom learning with planned and supervised field experiences. Students in the cooperative education program spend one or more semesters with companies in jobs closely related to their major and career objectives. During the cooperative program, students gain valuable experience and income.

## The Women In Engineering Program

The Women in Engineering Program in the College of Engineering, Mathematics, and Science provides support to women enrolled in the college through a variety of programs and services. An information network is developed through the Mentor Program and a local chapter of the Society of Women Engineers which provides the opportunity

- to network with other students and professional men and women;
- to learn professional skills;
- to develop friendships with other students;
- to learn how to transition from college to a professional job;
- to learn how to help themselves and others;
- to learn job searching and interviewing techniques;
- to learn about campus resources;
- to learn about harassment and equity in the work place, with respect to the issues of both men and women;
- to work one-on-one with an academic advisor; and
- to develop leadership experience and skills.

The Women in Engineering Program also provides outreach to young women to increase their awareness of the opportunities for themselves within the engineering profession. The Director visits middle, junior, and high schools to talk to young men and women about engineering. In addition, the program hosts a one-week Summer Institute and an Engineering Career Day, which provide hands-on experiences with engineering and life on a college campus. For more information about the Women in Engineering Program, please write to the Director, Women in Engineering Program, University of Wisconsin-Platteville, 1 University Plaza, Platteville, Wisconsin 53818-3099 or call (608) 342-1563.

### The Engineering Advising Office

The Engineering Advising Office provides a comprehensive set of services that will assist engineering students in maximizing their educational experience at UW-Platteville while working through a challenging curriculum. The advising office does this by providing faculty and students with the most recent changes in program requirements, assisting students with scheduling questions when their as-

signed advisor is not available, and encouraging students to utilize the numerous services on campus which have been established to assist students through their academic career. In addition, the advising office is committed to providing assistance and support to those students in transition to other career choices.

### For More Information

For more information about a career in mechanical engineering and the program at UW-Platteville, write to the Chair of the Department of Mechanical and Industrial Engineering, University of Wisconsin-Platteville, 1 University Plaza, Platteville, Wisconsin 53818-3099, or call 608.342.1721, or 1.800.362.5515. Fax 608. 342.1566.

For general information on the university and its programs, consult the website at [www.uwplatt.edu](http://www.uwplatt.edu) or contact UWP Prospective Student Services, University of Wisconsin-Platteville, 1 University Plaza, Platteville, WI 53818-3099, or call toll-free 1.877.897.5288 or locally 608.342.1068.

## Suggested Course of Study

### First Year

#### First Semester

Math	2640	Calculus & Analy. Geom. I	4
Engl	1130	Freshman Composition I	3
Chem	1450	Chemistry for Engineers	5
GE	1000	Engineering Success Skills	1
PE	1000	Fitness Assessment	1
			<b>14</b>

#### Second Semester

Math	2740	Calculus & Analy. Geom. II	4
Engl	1230	Freshman Composition II	3
Phys	2530	General Physics I	3
Phys	2510	General Physics I Lab	1
GE	1030	Intro. to Eng. Projects	1
GE	1320	Engr./Computer Graphics	2
GE	2130	Statics	3
			<b>17</b>

### Second Year

#### First Semester

Math	2840	Calculus & Analy. Geom. III	4
Phys	2640	General Physics II	4
Phys	2610	General Physics II Lab	1
GE	2340	Mechanics of Materials	4
PE	1XXX	Phy. Ed. Activity	1
		Hum. or Soc. Sc. Elective	3
			<b>17</b>

#### Second Semester

Math	3630	Differential Equations	3
ME	2630	Thermodynamics	3
ME	3040	Engineering Materials	3
GE	2230	Dynamics	3
GE	2820	Engineering Economy	2
		Hum. or Soc. Sc. Elective	3
			<b>17</b>

### Third Year

#### First Semester

Spch	1010	Public Speaking	2
ME	3230	Manufacturing Processes	3
ME	3300	Fluid Dynamics	3
ME	3830	Mechanisms and Machines	2
ME	3630	Applied Thermodynamics	2
GE	2930	Applications Elect. Engr.	3
		Hum. or Soc. Sc. Elective	3
			<b>18</b>

#### Second Semester

ME	3030	Dynamical Systems	3
ME	3640	Heat Transfer	3
ME	3720	Mechanical Systems Lab	3
ME	3330	Design of Machine Elements	3
		Math Elective (3230 or 4030)	3
		Hum. or Soc. Sc. Elective	3
			<b>18</b>

### Fourth Year

#### First Semester

ME	4330	Automatic Controls	3
ME	4720	Thermal Systems Lab	2
ME	4730	Thermal Sys. Design	2
ME	3730	Mechanical Systems Design	2
ME		Technical Elective	3
		Hum. or Soc. Sc. Elective	3
			<b>15</b>

#### Second Semester

ME	4930	Senior Design Project	3
ME		Technical Elective	3
ME		Technical Elective	3
		Hum. or Soc. Sc. Elective	3
		Hum. or Soc. Sc. Elective	3
			<b>15</b>

**Total Credits 131**

The University of Wisconsin-Platteville does not discriminate on the basis of age, race, creed, color, handicap, sex, sexual orientation, developmental disability, national origin, ancestry, marital status, arrest record or conviction record.