

Contact

Mohsen Shahinpoor, Chair
Department of Mechanical Engineering
5711 Boardman Hall, Room 219
Orono, ME 04469-5711

207-581-2120
FAX: 207-581-2379

E-mail: mohsen.shahinpoor@umit.maine.edu
Web site: <http://www.umaine.edu/MechEng/>

Admission Requirements

(In years as established by the college)

A high school diploma with the following specific courses:

- 4 English
- 2 Algebra I & II
- 1 Geometry
- 1/2 Trigonometry
- 2 Lab Science (*chemistry & physics*)
- 2 History/Social Studies
- Academic electives (*to equal at least 17 total credits*)

To ensure current mathematical skills, students should take a mathematics course during their senior year of high school.

Major Requirements

- 21 credits Engineering Design
- 46 credits Engineering Sciences
- 19credits Mathematics
- 16 credits Sciences (*basic*)
- 18 credits Humanities & Social Sciences
- 6credits Communications (*composition, technical writing*)
- 4 credits Other (*computer, etc.*)

130 Minimum total credit hours required for graduation

College of Engineering

Program Description

Since mechanical engineers are concerned with the principles of motion, energy, matter and force, they are people who design the machines, products and systems so essential to everyday life. Mechanical engineers design simple devices like doorknobs and fishing reels, and complex systems such as airplanes, ships, submarines, hovercrafts, space shuttles, robots, automobiles, satellites and power plants. Mechanical Engineering encompasses many specialties, and mechanical engineers design advanced materials and structures to meet the demands of supersonic and hypersonic space travel. They work in the nuclear field on the design of electrical power plants equipped with reactors, pressure piping, heat exchangers and other specialized components. In the automobile industry, mechanical engineers design the various parts of a car, and in manufacturing companies they develop computer systems that improve and speed up the production process. In fact, mechanical engineers play a role in most of the things that people drive, play with or live in. It is the responsibility of engineers to design machines whose parts and assemblies function in a safe and reliable, efficient and predictable fashion. Mechanical Engineers also get involved in health and biomedical engineering education and research.

The Department of Mechanical Engineering is committed to the preparation of the student for the initiation of a professional career or for the continuation of studies in graduate school. The program develops the student's creative potential to meet the increasingly complex needs of industry, government and education. The curriculum provides a foundation of knowledge in mathematics, thermal sciences, dynamic systems, material science, fluid and solid mechanics, and design of structures. The development of abilities in mathematical analysis, experimental techniques, computer methods and design are emphasized throughout the program. Technical electives give the student the opportunity to gain additional competence in specific areas.

A major strength of the department is the capstone senior design sequence where design experiences are frequently drawn from government and industrial sources. Engineers must address problems which raise issues requiring awareness of economic, political, social and legal issues as well as the technical issues of the profession. Therefore, preparation for a career in Mechanical Engineering includes an introduction to the humanities and social sciences as well as the mathematics, science and engineering fundamentals.

The Department of Mechanical Engineering provides students the opportunity to participate in cooperative education, and also pursue a double major or a double degree as well as a five year B.S. to MBA program. Furthermore, there are several departmental scholarships available on a competitive basis starting with the second year of study.

Career Opportunities

Mechanical Engineering graduates may choose from many career opportunities in both public and private sectors. Typical self-reported job titles include: boiler design engineer, mechanical engineer, robot engineer, production engineer, nuclear engineer, project engineer, acoustic engineer, service engineer, plant engineer, project manager, division manager, mainframe department manager, environmental engineer, product engineer, senior systems design engineer, quality control engineer, among others. Typical career fields include the design, manufacture and installation of steam generating equipment; maintenance and retrofit of submarines; ship design; design and manufacture of pulp and paper machinery; design of nuclear reactor systems; computer hardware and software development; design of automotive components; design and manufacture of telecommunications products; design and manufacture of automated assembly machines; intelligent robotic systems; vibration analysis; and, private consulting, among many others.

General Education Requirements*

ENG 101	College Composition
18 credits	Human Values & Social Context area (<i>a single course may satisfy more than 1 sub-category, but a total of 18 credits must be completed</i>) <ul style="list-style-type: none">Western Cultural TraditionSocial Context & InstitutionsCultural Diversity & International PerspectivesPopulation & the EnvironmentArtistic & Creative Expression
2 courses	Designated Writing Intensive (<i>1 must be within the major</i>)
2 courses	Biological or Physical Sciences (<i>must include at least 1 laboratory course</i>)
1 course	Ethics (<i>emphasis on discussion of ethical issues in 1 course or series of courses</i>)
6 credits	Mathematics (<i>including statistics & some computer science, only 3 credits in computer science can count toward this requirement</i>)
1 capstone	An approved experience in which the student integrates the components of his or her undergraduate training to perform at a professional level. The capstone experience is usually completed during the senior year in consultation with the student's academic advisor.

**All UMaine students must complete these general education requirements, which are counted in the total credit hours required for graduation and may be contained in the Major Requirements previously listed.*

Specialized Information

The Department of Mechanical Engineering offers minors in Mechanical Engineering with concentrations in solid mechanics, fluid mechanics and thermodynamics. The minors are open to all undergraduate, degree-seeking University of Maine students and requires the completion of 18 credit hours in Mechanical Engineering courses.

Graduate Study

The Mechanical Engineering Department offers the Master of Science (thesis and non-thesis) degree and the Doctor of Philosophy degree.

Academic Programs 2008-2009

Please refer to the web site (<http://factsheets.umaine.edu/>) for the most updated version of the fact sheets.

This fact sheet is intended for informational purposes only and is subject to change.