

Bachelor of Science in Mechanical Engineering

The goal of the Mechanical Engineering program is to provide students with the necessary training and education for them to become technical leaders for various industrial, commercial, consulting, and governmental organizations. Mechanical engineers apply the principles of force, motion, energy, and thermal fluids to design tools and processes needed for the human, material, and economic benefit of society. As such, the program is firmly based on the understanding and application of scientific and engineering principles. Technical communication in oral and written form is also emphasized.

Graduates are expected to demonstrate understanding of their social, cultural, and ethical responsibilities to a global society. Graduates learn and then demonstrate proper use of engineering materials and methods that are safe, environmentally considerate, aesthetically pleasing, and fiscally responsible. Potential work-related duties include development and construction of machines and mechanisms; development, instrumentation, and control of manufacturing processes and procedures; design of mechanical systems for heating and cooling; development of energy management procedures; and renewable energy alternatives.

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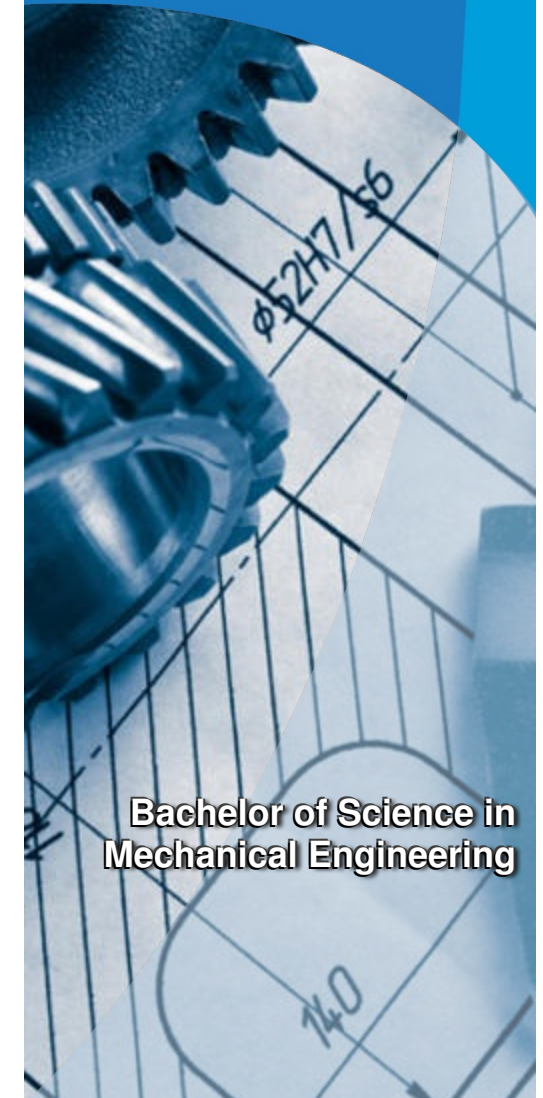
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**School of Science,
Engineering, and Technology**



**Bachelor of Science in
Mechanical Engineering**

Curriculum

The strengths of the program include study of engineering and scientific principles and laboratory experiences, and use of state-of-the-art computer and equipment.

Graduates of this program are prepared to seek graduate degrees including the M.S. and Ph.D. in Mechanical Engineering.

This program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

For a B.S. degree in Mechanical Engineering, a minimum of 131 credits is required.

Courses

In addition to [General Education requirements](#) (45 credits), this major requires the following:

PRESCRIBED COURSES (88-89 credits)

CHEM 110 GN(3), EDSGN 100S(3) (Sem: 1-2)
E E 211(3), E MCH 211(3), E MCH 212(3), E MCH 213(3), M E 300(3), MATH 140 GQ(4), MATH 141 GQ(4), MATH 220(2-3), MATH 230(4), MATH 251(4), PHYS 211 GN(4), PHYS 212 GN(4) (Sem: 1-4)
CMPSC 200 GQ(3), ENGL 202C GWS(3) (Sem: 3-6)
M E 320(3), M E 345W(4), M E 349(3), M E 357(3), M E 365(1), M E 367(3), M E 380(3), M E 410(3) (Sem: 5-6)
M E 448(3), M E 449(3), M E 468(3), MATSE 259(3) (Sem: 7-8)

ADDITIONAL COURSES (6 credits)

ECON 102 GS(3) or ECON 104 GS(3) (Sem: 1-6)
CHEM 111 GN(1) and PHYS 214(2); or CHEM 112 GN(3), or BIOL 141 GN(3) (Sem: 3-4)

SUPPORTING COURSES AND RELATED AREAS (13 credits)

Select 13 credits of program elective courses from school-approved list. (These credits must be selected to fulfill the thematic requirements of the major.) (Sem: 7-8)

Undergraduate Admissions Requirements

Minimum high school course requirements for admission to baccalaureate (four-year) degree programs are listed below. Keep in mind that specific programs may have additional requirements or recommendations.

English

Four units, including one unit each in composition and literature, are required.

Social Studies/Art/Humanities

Three units in any combination of social studies, arts, and humanities are required.

World Language

Two units in a single world language other than English are required. However, a student may be admitted with fewer than two units in a world language other than English, but must correct this deficiency by the time s/he earns 60 credits or graduates from Penn State, whichever comes first. This deficiency may be corrected by passing one three- or four-credit college level world language course or by demonstrating proficiency equivalent to two units of high school world language study.

Either a third unit in the same language or an additional unit in a second world language other than English is recommended.

Science

Three units of science are required
Preparation in chemistry and physics is recommended but not required for our Science and Engineering/Engineering Technology programs

Math

Three units of mathematics are required (four are recommended), selected from any combination of algebra, geometry, and trigonometry
Some programs have additional mathematics requirements. Our Business, Engineering/Engineering Technology, and Science programs require one-half unit of trigonometry or higher level math within the required three units

Penn State requires proof of graduation or a GED for admission to four-year degree programs.

*In most high school curricula, one unit = one year.

Visit Undergraduate Admissions: Admissions Requirements for more information (<http://goo.gl/eVGAMB>)