

BACHELOR OF SCIENCE IN

# MECHANICAL ENGINEERING

Penn State Berks, the leading engineering college in Berks County, is one of only four Penn State campuses to offer the B.S. in Mechanical Engineering. This degree program is ABET-accredited. ABET is the global leader in accreditation of engineering, engineering technology, computing, and applied science programs.

## Gain Marketable Experience in College

Mechanical Engineering is one of the largest and broadest engineering disciplines, involving the study of mechanics, fluid/thermal systems, and system dynamics. Built on a foundation of physics, chemistry, and mathematics, the Mechanical Engineering program at Penn State Berks includes both a strong design emphasis and hands-on laboratory experience. Students learn to use scientific and engineering methods to devise useful products that are safe, reliable, and cost effective.

## Career Opportunities

Mechanical engineers have tremendous flexibility, working in every type of industry, in jobs ranging from research and development to manufacturing and operations. Mechanical engineers also work in product design, procurement, technical sales, and management. Graduates enter a wide variety of industries such as health care, energy, military, transportation, consumer products, and sports/recreation. The B.S. in Mechanical Engineering education is also an excellent preparation for careers such as technical management, finance engineering, business and patent law, and technical sales.

## Graduate Education

Students in the Mechanical Engineering program will be well prepared for graduate and professional schools.

## Academic Minors

Enhance your degree with one of the college's academic minors; the following are recommended for Mechanical Engineering majors.

- Business
- Entrepreneurship & Innovation
- Information Sciences & Technology
- Kinesiology



## Job Titles and Salaries

The following is a list of job titles and salaries, which was compiled from the Bureau of Labor and Statistics *Occupational Outlook Handbook*. This is only a partial list to provide you examples of the kinds of jobs available to graduates with a B.S. in Mechanical Engineering. Some positions require additional experience.

| Title              | 2018 Median Pay |
|--------------------|-----------------|
| Biomechanical      | \$88,550        |
| Electrial          | \$99,070        |
| Electro-Mechanical | \$99,070        |
| Manufacturing      | \$87,040        |
| Mechanical         | \$87,370        |
| Process            | \$87,040        |
| Product Design     | \$87,370        |
| Systems            | \$99,070        |



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Studies begin in mathematics, mechanics, and thermodynamics and progress to courses such as machine design, heat transfer, and system dynamics. Students also learn how to apply scientific principles, engineering analysis, and engineering design to solve unstructured problems.

In their senior year, students will work in small teams with faculty advisers to complete a capstone design project. Projects can be based on student generated ideas or on faculty research, advancing basic understanding in Mechanical Engineering. Additional projects come through the Berks Learning Factory; these are industry-sponsored and provide an opportunity for students to work on “real world” design challenges while completing their education.

During the four years at Berks, students have several opportunities to participate in faculty led research, student driven projects, class related projects, and multidisciplinary projects working with students enrolled in other degree programs at the college.

The engineering faculty have a diverse research background. Current research projects include studies to develop fundamental understanding of flapping wing flight, sensor fusion, biomechanics, virtual reality, energy harvesting, multi-robot systems, 3D printing for health applications, composite materials, and engineering education. Faculty are also involved in many experimental projects and encourage student participation.

Penn State Berks offers many state-of-the-art facilities that support the Mechanical Engineering program, including the Human Movement Research Center Lab, which includes the Beaver Gait Lab. The Gaige Technology and Business Innovation Building also houses the following laboratories: Fluid Discovery, System Dynamics, Rapid Prototyping, Material Testing which includes a traditional machine shop with CNC mills and a CNC lathe, and an Electrical Lab which includes digital, analog, and microprocessor systems.

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## Admission Process

Applying for degree admission to Penn State Berks is simple. Applications are available on the web at [berks.psu.edu](http://berks.psu.edu). Penn State reviews applications throughout the year. Students can expect a decision within four to six weeks after completing the process. Contact the Berks Admissions Office with your questions at 610-396-6060.

## Transfer Students

Penn State Berks welcomes students who began their education at other institutions. Contact the Berks Admissions Office with your transfer questions at 610-396-6060.

## Financial Aid

Eligibility for all financial aid is determined by completing the Free Application for Federal Student Aid (FAFSA) form available on the web at [fafsa.ed.gov](http://fafsa.ed.gov). Contact the financial aid coordinator at Berks or visit [psu.edu/studentaid](http://psu.edu/studentaid) for a complete description of the types of available student aid and the application process at 610-396-6070.

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