

ENERGY ENGINEERING, B.S.

Seven Penn State campuses are scheduled for closure after Spring 2027: DuBois, Fayette, New Kensington, Mont Alto, Shenango, Wilkes-Barre, and York. New students are not being admitted at these campuses.

Begin Campus: Any Penn State Campus

End Campus: University Park

Program Description

The undergraduate program in energy engineering is designed to reflect the growing impact and demand for energy in society and to equip students with the knowledge necessary to achieve the following career and professional goals: become valuable contributors in addressing society's energy needs and demands; successful leaders in advancing the technology and management of energy; innovators and entrepreneurs in the energy sector; and educators, practicing engineers, and national leaders on energy and associated environmental, health and safety, and policy and economics issues. The program integrates skill sets in the physical sciences (chemistry, engineering, mathematics, and physics) and social sciences (economics, policy, and management) to ensure successful career opportunities and growth within energy-related industries, government agencies, and academia.

The courses are structured to enable students to understand engineering fundamentals and apply the knowledge to solve problems in the production, processing, storage, distribution, and utilization of energy using multiple techniques as synthesis, analysis, design and case studies. Inquiry-based teaching methods and lab experiences are emphasized. The faculty research and scholarly activities are integrated into the curriculum. The program is designed to train students to be lifelong learners, problem solvers, and energy industry leaders. The educational opportunities are sufficiently flexible, broad, and diverse to enable students to tailor their educational experience to particular interests, background, and expected role in society. Flexibility in the curriculum allows other students in energy related programs such as agricultural and biological, chemical, civil, electrical, environmental, mechanical, mining, nuclear, and petroleum engineering, materials science and engineering, industrial health and safety, and energy business and finance to have dual or concurrent degrees, minors, or options (e.g., energy and fuels engineering option in chemical engineering).

What is Energy Engineering?

Energy engineering is a multidisciplinary field of engineering that combines principles of materials, mechanical, electrical, and chemical engineering, along with environmental science, systems thinking, and economics, to address the challenges and opportunities of energy production, conversion, storage, distribution, and utilization. Energy engineers are equipped with the requisite knowledge and skills to design, analyze, and optimize energy systems for efficient, sustainable use. Energy processes include the extraction of natural resources, such as oil and gas, as well as renewable or sustainable energy sources, including solar power, wind, biofuels, and hydropower.

You Might Like This Program If...

- You are interested in solving real-world energy problems.
- You are passionate about clean energy and protecting the environment.

- You want to help shape the future of how the world produces and uses energy.