

ENGINEERING SCIENCE, 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 Educational Objectives

The expected accomplishments of Engineering Science graduates in the first several years following graduation are:

1. **Excel in Interdisciplinary Environments** by leveraging the broad, interdisciplinary foundation of Engineering Science to excel in varied professional environments, equipping graduates with the agility to adapt and innovate within and beyond their areas of initial expertise.
2. **Drive Innovation and Problem Solving and Design** by applying interdisciplinary knowledge in research, development, and design to address challenges and create new solutions across a range of fields, demonstrating the agility to contribute to emerging and evolving areas in industry, academia, and government.
3. **Communicate Effectively and Responsibly** by sharing technical findings and best practices with professional and public audiences through presentations, publications, and collaborative teamwork, upholding ethical standards that contribute positively to society.
4. **Foster Professional Development** in mentoring, leadership, and advocacy embodying the commitment to build a community of belonging for all STEM students.
5. **Engage in Lifelong Learning** by pursuing ongoing education through advanced degrees, professional certifications, and other learning opportunities that enhance technical skills, leadership, and adaptability to emerging fields and evolving societal needs.

Student Outcomes

Student outcomes describe what students are expected to know and be able to do by the time of graduation. The Engineering Science program is designed to enable students to:

1. Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. Communicate effectively with a range of audiences
4. Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. Acquire and apply new knowledge as needed, using appropriate learning strategies.