

MECHANICAL ENGINEERING, B.S. (ENGINEERING)

Begin Campus: Any Penn State Campus

End Campus: Scranton, University Park

Program Educational Objectives

The overall educational objective of the Mechanical Engineering program is to help prepare our graduates to succeed and provide leadership in a range of career paths within their first five years. To that end we endeavor to maintain and continuously improve a curriculum that prepares our graduates to:

1. Apply foundational knowledge, critical thinking, problem-solving, and creativity in engineering practice or in other fields.
2. Grow as leaders while maintaining the highest societal responsibility and ethical standards in the global workplace.
3. Develop thoughtful solutions through effective communication, collaboration, inclusivity, and teamwork.
4. Seek advancement in their knowledge and careers through continuing technical and/or professional studies.

Program Outcomes (Student Outcomes)

The program must have documented student outcomes that support the program educational objectives. Attainment of these outcomes prepares graduates to enter the professional practice of engineering. Student outcomes are outcomes (1) through (7), plus any additional outcomes that may be articulated by the program.

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. an ability to 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. an ability to communicate effectively with a range of audiences
4. an ability to 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. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies