

MECHANICAL ENGINEERING, B.S. (ALTOONA)

Begin Campus: Any Penn State Campus

End Campus: Altoona

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. Develop innovative solutions through effective communication, collaboration, inclusivity, and teamwork.
2. Pursue lifelong learning and continuous improvement of their knowledge, impact, and skills in the engineering field, and seek intellectual advancement by continuing technical and professional studies.
3. Distinguish themselves with excellence in mechanical engineering and leadership through contributions to their local communities, professional organizations, local, state, or national governments, or intellectual communities.
4. Be able to solve real-world engineering problems by following established theory with practice, fundamentals, ethics, critical thinking, and creativity.

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