

BS IN MECHANICAL ENGINEERING

The mission of the St. Ambrose Mechanical Engineering (ME) program is to develop graduates who design, communicate and integrate humans in thermal and mechanical engineering solutions.

EDUCATIONAL OBJECTIVES

Students are educated through a carefully designed curriculum flowing from articulated outcomes and objectives that includes proven engineering design knowledge, a breadth of general education, communication skills, an understanding of fundamental engineering, design, analysis, operation and improvement of integrated systems that produce or supply products and services in an effective, efficient, sustainable and socially responsible manner, and an ability to solve real problems. Mechanical Engineering graduates will:

1. Demonstrate their success through leadership roles.
2. Advance their expertise through professional practice or graduate education.
3. Investigate, define, communicate, defend and implement solutions to complex problems.
4. Enrich their lives and the lives of others.

STUDENT OUTCOMES

Students are expected to know and be able to do the following student outcomes by the time of graduation:

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.

In preparation for professional practice, the curriculum includes:

1. Principles of engineering, basic science, and mathematics (including multivariate calculus and differential equations),
2. Applications of these topics to modeling, analysis, design, and realization of physical systems, components or processes,
3. Coverage of both thermal and mechanical systems, and
4. In-depth coverage of either thermal or mechanical systems.