Mission

"Prepare Engineering Students for Successful Careers"

Vision

"Be a nationally recognized mechanical engineering department that attracts, rewards, and retains outstanding faculty, students, and staff"

Vision Metric: Be a Department of Choice Nationally

The Department of Mechanical Engineering-Engineering Mechanics will be nationally recognized as having one of the best undergraduate and graduate programs in the nation. Based on the quality and balance of its undergraduate and graduate programs and research it will be a department of choice by prospective students, parents, faculty, staff, corporate donors, and corporate employers worldwide.

Mechanical Engineering Educational Objectives

Consistent with this mission, and in order to prepare our students for successful careers in engineering, the ME-EM Department maintains a strong mechanical engineering program with the following Program Educational Objectives:

1. Meet or exceed the expectations of employers by:
   - Taking on increasing responsibilities such as managing projects and leading teams
   - Making sound business and financial decisions
   - Making innovative contributions that positively impact society and the world
2. Successfully pursue advanced study
3. Foster work environments that value diverse viewpoints and enable everyone to work at their highest potential
4. Structure a career path to achieve professional goals

Student Outcomes

The ME-EM faculty have adopted the eleven Student Outcomes (designated a through k in the ABET terminology) that support its program’s two Program Educational Objectives. In addition, the Department has agreed upon the two Student Outcomes (designated l and m) that support the Program Criteria for Mechanical Engineering programs. Engineering programs must demonstrate that their graduates have (a-k):

a. an ability to apply mathematics, basic science and engineering science;
b. an ability to design and conduct experiments, as well as to analyze and interpret data;
c. an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety manufacturability, and sustainability;
d. an ability to function on multi-disciplinary teams;
e. an ability to identify, formulate, and solve engineering problems;
f. an understanding of professional and ethical responsibility;
g. an ability to communicate ideas effectively;
h. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
i. a recognition of the need for, and ability to engage in life-long learning;
j. a knowledge of contemporary issues; and
k. an ability to use the modern techniques, skills, and tools necessary for engineering practice.

Program Criteria

The Michigan Tech mechanical engineering program satisfies the two mechanical engineering program criteria as described below.

1. Curriculum The curriculum must require students to apply principles of engineering, basic science, and mathematics (including multivariate calculus and differential equations); to model, analyze, design, and realize physical systems, components or processes; and prepare students to work professionally in either thermal or mechanical systems while requiring topics in each area.
2. Faculty The program must demonstrate that faculty members responsible for the upper-level professional program are maintaining currency in their specialty area.