

# MECHANICAL ENGINEERING



LAKE SUPERIOR  
STATE UNIVERSITY

Sault Ste. Marie, Michigan



Participating in a senior year experience exposes you to real-world projects, customers and opportunities. Above, a presentation introduces visitors to a newly-installed dynamometer. Other opportunities include working on the SAE mini Baja vehicle, working with summer robotics camps or assisting with a Product Development Center project.

## Practicality and Emphasis

Mechanical engineers create, draw, design, and analyze systems, machines, devices, and components from many diverse fields. They are involved with products from energy, transportation, medicine, sports, computers, and manufacturing - just to name a few.

Students learn how to apply the theory from engineering materials, engineering mechanics, fluid mechanics, thermal sciences, and automatic controls to real-world problems. Skills are also developed in computer-aided design.

As a mechanical engineering student, you will take a sequence of engineering, calculus, higher level mathematics and science courses that provide that a strong foundation in the theory of engineering. Labs will provide the practical application of that theory through the use of industrial grade equipment.

To cap off your degree, you will participate in a senior year experience as part of a multidisciplinary engineering team working on a real-world project provided by industry, or you may choose to participate in a cooperative education environment or pursue a research-oriented project.

Your foundation will be further enhanced by choosing an option, or emphasis area, which will appear on your transcript. You can select from:

**Vehicle Systems:** Focus on the performance of vehicles including handling, acceleration, ride, draw-bar pull, and noise emission. Learn how to predict vehicle performance through analytical skills and computer simulations, how to test system performance using instrumentation and a chassis dynamometer, how to design for performance using a perspective of the vehicle as a complete system, and develop a competence with specific sub-systems as you progress. Automotive systems will be emphasized, but you will also study off-road vehicles, heavy trucks, rail systems and touch on wartime and aerospace vehicles.

**General Mechanical:** Customize your engineering education with this flexible option which allows you to choose topics from robotics, vehicle and quality engineering to match your interests. Career opportunities include product design, component design, automotive systems design and testing, packaging and manufacturing design, process design, and product and/or process development.

**Robotics and Automation:** Step into our lab with automated flow lines comprised of Staubli, Fanuc and Adept industrial robots. The lines are equipped with a variety of functionality including machine vision and sensors, continuous conveyor systems, rotary index tables, design and manufacturing pallets, feeders, fixtures, tool-changing stations and end-of-arm tooling. You will work with programmable logic controllers (PLCs), and various software packages to prepare you for a career in fields of applications, design, software, equipment development, and controls.

Learn more at  
[www.lssu.edu/eng](http://www.lssu.edu/eng)  
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