Welcome to the Engineering Senior Project Presentations & Demonstrations

Presentations are held in CASET 123.

Includes presentation and demonstration by the residents of the Engineering Living & Learning Community.

1:30 p.m.  
Presentation: Team RED

2:00 p.m.  
Presentation: Team LAPD
Demonstration: Team RED in CASET 122

2:30 p.m.  
Presentation: Team ASE
Demonstration: Team LAPD in CASET 124

3:00 p.m.  
Presentation: Team LSTE
Demonstration: Team ASE in CASET 125

3:30 p.m.  
Presentation: Engineering House
Demonstration: Team LSTE in CAS 124

4:00 p.m.  
Demonstration: Engineering House in CASET 310A

The School of Engineering and Technology comprises the following disciplines:

- Computer Engineering
- Electrical Engineering
- Electrical Engineering Technology
- Industrial Technology
- Manufacturing Engineering Technology
- Mechanical Engineering

All of the Lake Superior State University senior engineering and engineering technology bachelor’s students are required to complete a challenging senior design project.

The students work in multidisciplinary teams and use a composite of their technical and general education courses to successfully complete these projects.

The intention of the senior design project is to provide valuable engineering experience that will help students transition from academia to industry or graduate school. Each project requires a detailed technical engineering analysis, development and follow-through to provide a realistic experience for our graduates.

The Engineering House (Chippewa Hall) will be open for tours.

Students will be available throughout the afternoon for informal demonstrations and questions.

Special thanks to Laura Bofinger and Jeanne Shibley

For more information about LSSU’s School of Engineering & Technology, contact the office at 906-635-2207.
Team ASE has designed a multipurpose robot hand and tutorial guides for the application of advanced program features in an industry-standard robotics simulation software called ROBOGUIDE. The robot hand is capable of picking up two types of automotive components from a bin. The features and applications explored in ROBOGUIDE for the tutorials includes machine vision capabilities, calibration, robotic path generation, and 3D bin picking. Simulation studies allows for the verification of robotics applications in the virtual world. Team ASE will demonstrate some of the advanced features in ROBOGUIDE using a FANUC LR Mate robot in the robotics lab at LSSU.

Team LSTE developed an impact test stand for Bosch Automotive Steering (Bosch AS), which will be used in design validation of prototype steering systems. Bosch AS currently outsources this impact testing; the test stand will allow them to perform it in-house. The test stand can deliver a range of impact magnitudes to the steering system, hitting either the tie rod or the steering rack directly in either tensile or compressive modes. The test stand allows for the adjustment of tie rod angles to comply with various test requirements.

Team LAPD designed and built a laser measuring system for Mactech, Inc., that has a vision of incorporating precision measurement tools alongside its on-site services. It will be used to replace traditional dial indicators during the alignment process. The system will overcome several obstacles frequently encountered with traditional mechanical indicators, such as visibility, physical manipulation, and size constraints. The device will also be modular and wireless so that it can be attached to any machine desired by the operator, its linear adjustability will make it compatible with cylindrical objects of a given diametrical range, and will allow Mactech to observe surface quality before and after machining.

Team RED designed and built two robotic workcells using delta type robots suitable for use in an educational environment. The major goals of the project included design and build of the electrical and safety circuitry, programming of the robot, constructing the curriculum for a high school level, and completion of manuals.