

3:00 pm

Team IRC

Team Members: Sean Bellows (RE), Beau LaTulip (RE), Jameson McKnight (ME & RE), William Peltier (Mech), Maddie Whip (ME & RE)
Faculty Advisor: Dr. Edoardo Sarda **Company:** LSSU **Project Contacts:** Prof. Jim Devaprasad

Project Description: Team IRC (Integration of Rotary Cobots) is transforming the LSSU Robotics Lab by integrating four brand new FANUC CRX collaborative robots into a fully redesigned rotary line. This project will highlight how collaborative robots are driving the future of automation and serve as a signature feature of state-of-the-art Robotics Laboratory. The final outcome includes an engaging demonstration of the enhanced rotary line, featuring human-robot collaboration, hands-on lab exercises, and user-friendly tutorials.



3:30 pm

Team SUAVE

Team Members: Clay Brown (RE), Cameron Cook (CE), Mitchell Gorney (RE), Lezan Koyuncu (ME), Riley Sponseller (RE)
Faculty Advisor: Prof. Jim Devaprasad **Company:** Mission Design & Automation (Holland, MI), LSSU **Industrial Contacts:** Justin Darga, Geno Peyerck, Steve Solack, Dr. Sarda

Project Description: Team Superior Unmanned Applications with Vision Engineering (SUAVE) will be revitalizing and unleashing LSSU's Robots by completing three main objectives. They will be: 1) testing for site approval of \$1.2 million worth of robotics systems developed by Mission for LSSU, 2) implementing & showcasing FANUC's new 3D vision system on FANUC's CRX robots, and 3) updating select robotics and machine vision systems developed at LSSU in prior years. Laboratory activities designed around these systems will be created to provide an exciting learning experience for future LSSU Engineering students.

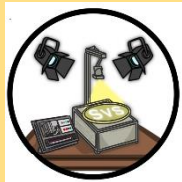


4:00 pm

Team UP-STREAM

Team Members: Brandon Buckmaster (MfgET), Lydia Knapp (ME & RE), Tyler Mroz (ME), Zeng Vue (EE), Sara Waltz (ME)
Faculty Advisor: Dr. Zakaria Mahmud **Company:** Pre-Tec (Eugene, OR) **Industrial Contacts:** Jeff Johnston, Rich Reardon, Kevin Danhof, Erik Finley

Project Description: Team UP-STREAM is tasked with analyzing three different styles of air collection in a robotic spray booth. The team will provide simulations and small scale models for the three evacuation types to PRE-TEC to be utilized in marketing and customer demonstrations. The ultimate goal of this project is to determine which evacuation method is most effective and provide evidence and visuals to support our conclusions.



4:30 pm

Team SVS

Team Members: Pascal Klimes (EE), Joseph Kramer (ME & RE), Benjamin Patrick (CE), Wyatt Zulski (CE)
Faculty Advisor: Prof. David Leach **Company:** JR Detroit (Auburn Hills, MI) **Industrial Contacts:** Lindsey Pajot

Project Description: Team SVS has been tasked by JR Detroit to design, fabricate, and test a vision training cart that will be used to train employees on the fundamentals of machine vision. The main goal of the project is to implement imaging technologies using vision cameras, lenses, filters, lighting, and software for a variety of manufacturing applications. Training modules will be created for parts recognition, dimensional gauging, and 2D data matrix reading.



5:00 pm

Team BET

Team Members: Reese Camp (ME), Wyatt Landerville (ME), Ashleigh Mrozek (ME), Hunter Nowakowski (Mech), Eli Rondeau (ME)
Faculty Advisor: Dr. Robert Hildebrand **Company:** LSSU **Project Contacts:** Ron Throener

Project Description: Team BET (Baja Engineering Team) will be designing and building an updated mini Baja cart that will incorporate an all wheel drive system. Our goal is to participate and be competitive in a mini Baja competition at the end of the school year and meet all of the new rules set by the SAE (Society of Automotive Engineers). We will be doing this by using an already existing drivetrain, designed by Team HEART in the 2022-2023 academic year, and adding a new chassis, suspension, transmission, and frame. Our design will be driven by simulation and parameter studies, similar to the process of development in the automotive industry.



5:30 pm

Team BAM

Team Members: Christopher Bohm (RE), Daniel Henderson (CE), Katherine Mendrick (ME & EE), Noah Murray (RE), Raul Velasco (ME & RE)
Faculty Advisor: Dr. Robert Hildebrand **Company:** LSSU **Project Contacts:** Dr. Edoardo Sarda, Chase Jannetta

Project Description: Team BAM (Bathymetric Autonomous Mapping) must develop a mobile bathymetric mapping system, utilizing an Autonomous Surface Vehicle (ASV). Team BAM will integrate an acoustics system for obstacle detection, path planner, and a sonar system on the ASV. At the completion of the project, the ASV will be capable of creating bathymetric maps in different bodies of water at specific site locations, through both remote control and autonomous navigation.



Senior Design Projects

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 multi-disciplinary teams and use a composite of their technical and general education courses to successfully complete these projects.

2024-25 Senior Projects Faculty Board

This group serves as advisors, overseers, and guides to help the teams through their overall process:

Masoud Zarepoor (Chair), Trevor Bryant, Jim Devaprasad, Robert Hildebrand, David Leach, Zakaria Mahmud, Edo Sarda, and Ron Throener

Special thanks to Rebecca Kilponen

The School of Engineering & Technology comprises:

- Computer Engineering
- Electrical Eng. Technology
- Electrical Engineering
- Manufacturing Eng. Technology
- Mechanical Engineering
- Mechatronics
- Robotics Engineering



ROBOTICS ENGINEERING DEGREE

LAKE SUPERIOR STATE UNIVERSITY
[LSSU.edu/Robotics](https://www.lssu.edu/Robotics)



pngtree.com



Welcome to the School of Engineering & Technology

Presentation Schedule

Team IRC	3:00 pm
Team SUAVE	3:30 pm
Team UP-STREAM	4:00 pm
Team SVS	4:30 pm
Team BET	5:00 pm
TEAM BAM	5:30 pm

Presentations will be in the Cisler Center Anchor Room



For more information about LSSU's School of Engineering & Technology
www.lssu.edu/eng or 906-635-2207



LAKE SUPERIOR STATE UNIVERSITY

The School of Engineering & Technology

presents the

Class of 2025



Senior Design Project Scope Presentations

Wednesday • October 2nd

3:00 p.m. – 6:00 p.m.

in the

LSSU Cisler Center Anchor Room &

Zoom <https://lssu.zoom.us/j/99459496960>