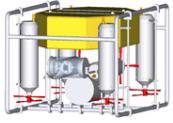


ROBOT FOR AQUATIC
DEVELOPMENT AND RESEARCH



Underwater
Vehicle
Design



Team Members:

Jeffrey Harrington, Aaron Parker,
Michael Scates and Thomas Waligora

Faculty Advisor: Morrie Walworth

Project Sponsor: Laboratory for Undergraduate
Research in Engineering
(LURE)

Industrial Customer Contact:

Morrie Walworth

RADAR has designed and built an underwater remotely-operated vehicle (ROV) with an operating depth of 300 ft. The team also designed and developed the vehicle's control system. The ROV will be used as a platform for future engineering research and as a tool to promote engineering at LSSU.



Inspection of Adhesive
on Automotive Glass

Team Members:

Ray Arbic, Michelle Deneau, Craig Salvalaggio,
Diane Siemiet and Desmond Silva.

Fall teammate: David Becker, co-op

Faculty Advisor: David Baumann

Project Sponsor:

Applied Manufacturing Technologies

Industrial Customer Contact: Harley Hammond

S3EC has designed a system to measure how well a clear adhesive is applied to the untreated exterior surface of automotive glass and constructed a prototype workcell to demonstrate the system.

The School of Engineering and Technology is comprised of the following disciplines:

- Computer Engineering
- Electrical Engineering
- Mechanical Engineering
- Manufacturing Engineering Technology
- Engineering Management

All LSSU senior engineering and engineering technology students are required to participate in a senior design experience.

Students work in multi-discipline teams to allow a composite of their academic endeavors to successfully complete these projects.

Each project of this capstone course is challenging and real-world oriented, requiring a detailed technical engineering analysis. The intent is to provide an opportunity for students to gain valuable engineering experience that will help them to either "hit the pavement running" in industry or further their education.

Find out more by visiting:

<http://engineering.lssu.edu>

or contact us at:

906-635-2207 • 1-888-800-LSSU, ext. 2207
engtech@lssu.edu

To visit campus or learn more about
Lake Superior State University,
contact the Admissions Department:

<http://www.lssu.edu/admissions>

906-635-2231 • 1-888-800-LSSU, ext. 2231
admissions@lssu.edu

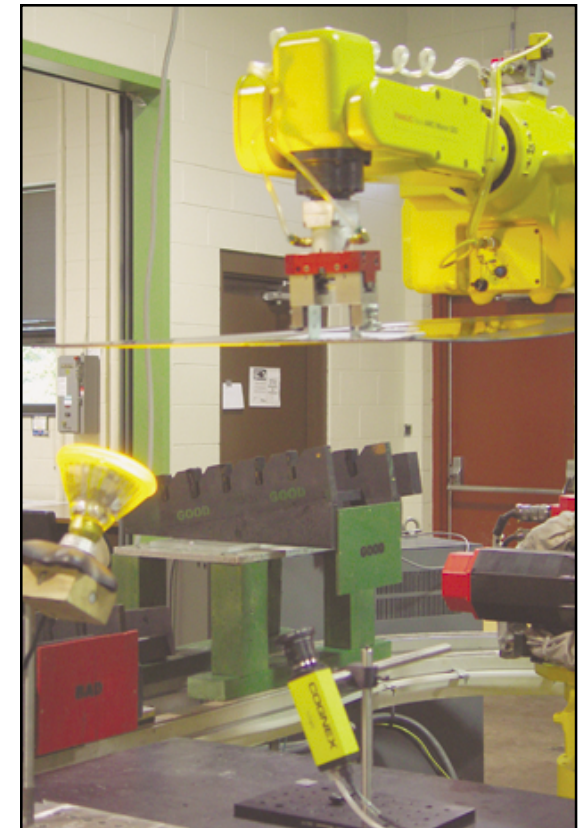
Lake Superior State University
650 W. Easterday Avenue
Sault Ste. Marie, MI 49783



Lake Superior
State University

SCHOOL OF ENGINEERING
& TECHNOLOGY

2003 Senior Design Projects



Team S3EC's complex vision-system took first place at the Cognex On Campus competition in Boston, May 2003.



ADVANCED BRAKING
TECHNOLOGY

Angular Measurement System

Team Members:

Alice Duesing, Matt Engle, Corey Knapp
and Steve Roch

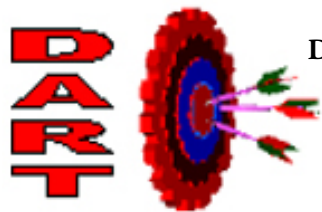
Fall teammate: Clint Lahey, co-op

Faculty Advisor: Dr. Nael Barakat

Project Sponsor: Continental Teves

Industrial Customer Contact: Robert Andersen

ABT has developed, in conjunction with Continental Teves, an Angular Measurement System for vehicle testing. It will provide more accurate and repeatable brake pedal travel measurements than any technologies currently used in industry.



DATA ACQUISITION
AND
RESEARCH
TECHNOLOGIES

Volume Consumption Machine

Team Members:

Joshua Eagle, Simon Meilstrup, Derek
Sandahl, Eric Schrage and Scott Wilding

Fall teammate: Jason Nightingale, co-op

Faculty Advisor: Jon Coullard

Project Sponsor: Continental Teves

Industrial Customer Contact: Bob Andersen

DART updated and redesigned the volume consumption machine for Continental Teves, to be more state of the art and user friendly through the use of computer control. The device measures hydraulic brake system characteristics to gather data used to assist in the design/modification of those characteristics.



INTEGRATED ROBOTIC SOLUTIONS

Three-Robot Assembly Workcell

Team Members:

Chris Casola, Steve Eles, Shawn Flint,
Randall Hale, Brad Musgrove,
and Trevor Wyncynski

Fall teammate: Harry Wiley, co-op

Faculty Advisor: Jim Devaprasad

Project Sponsor: Lake Superior State University

Industrial Customer Contact: Ray Adams

IRS designed and integrated a modern robotics workcell in the LSSU robotics laboratory. It will be used for future robotics classes, summer engineering camps and lab demonstrations. Automated assembly of Rayovac flashlights demonstrated robotics workcell's full capabilities and functionality.

MILLING EQUIPMENT CONTROL
TECHNOLOGIES AND
ENGINEERING
CONCEPTS



CNC Mill Retrofit and Update

Team Members:

Steve Dew, Jeff Gordon, Brian Kelly,
Eric Lund and Andrew Zambusi

Fall teammate: Michael Heyboer, co-op

Faculty Advisor: Keith Schwiderson

Project Sponsor: Lake Superior State University

Industrial Customer Contact: Jon Coullard

MECTEC converted a 2 1/2-axis CNC milling machine into a full 4-axis CNC machining center complete with automatic tool changer. It will be used as a learning tool within the University's Manufacturing Processes Laboratory.



MICROCONTROLLER INTEGRATED
ROBOTIC CONTROL SYSTEMS

Robotics Research Platform Development

Team Members:

Gary Gagne, Tom MacLean, Derek Speziale
and Vincenzo Speziale

Faculty Advisor: Morrie Walworth

Project Sponsor: Lake Superior State University

Industrial Customer Contact: Morrie Walworth

MIRCS has developed a platform for robotics research at LSSU. It is a fully functional and documented robotic system capable of simple point to point motion that will be used for a variety of research activities.



QUALITY VERIFICATION
TECHNOLOGIES

Column Shift Tester

Team Members:

Paul Brough, Ryan Curtis, Jerry Drennan,
Chris Morgan, Bo Reinhardt, Jeff Westfall
and Steve Wojtaszek

Fall teammate: Jeff Dukes, co-op

Faculty Advisor: Paul Duesing

Project Sponsor: Dura Automotive - Fremont

Industrial Customer Contacts:

Kurt McDowell

Mark Hatfield

The Column Shifter Test Stand can test multiple key features on a variety of Ford column shift-levers. The stand uses a PLC to incorporate a pneumatic, vision, mechanical and electrical system to ensure the quality control of the millions of column shift levers that leave Dura's facility for Ford vehicles.