



VEHICLE MOTION SYSTEMS

The Vector Motion Sensor and Calibration Test Stand

Team members:

Jamie Florio, Brian Johnson, Ray Love,
Pat Mahoney, Ryan McKnight, Justin Zilke

Faculty Advisor: Alan Niemi

Project Sponsor: Continental-Teves

Industrial Customer Contact: Bob Andersen

The Vector Motion Sensor and Calibration Test Stand project was initiated in order to improve the quality of Continental Teves' Anti-Lock Brake System (ABS), Traction Control System (TCS), and Electronic Stability Program (ESP) Systems. The goal of the project is for Vehicle Motion Systems to design and build a prototype Vector Motion Sensor to monitor vehicle dynamics during ABS, TCS, and ESP testing. Also, Vehicle Motion Systems must design and build a calibration test stand that will be used to calibrate the Vector Motion Sensor and other similar sensor clusters.

Presentation: 1:30 p.m., CASET 123

Demonstrations: 2:15-3:45 p.m., CASET 122

The following students, who have or will be completing their senior design projects through independent studies, participated with this year's teams during the Fall 2001 semester:

ACE: Steve Kars

DOE: Chris Gray, Michee Vrtis

ICE: David Skerl

VMS: Petr Marek



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

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

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

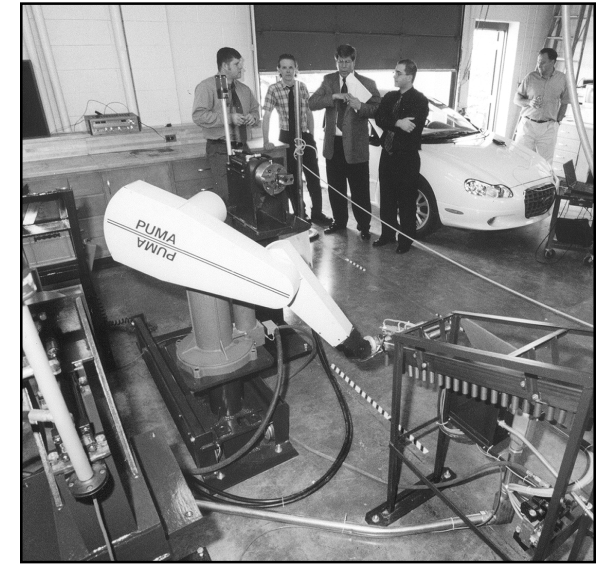
The students work in teams and use a composite of their technical and general education courses to successfully complete these projects.

Each project requires a detailed technical engineering analysis and is a challenging and realistic experience for our senior graduates. The intention of the senior design project is to provide valuable engineering experience that will help the team members gain employment in industry.

THE SCHOOL OF ENGINEERING & TECHNOLOGY

presents the

Class of 2002 Senior Design Project Presentations



Friday • May 3, 2002

1:30 p.m. - 3:45 p.m.

in the

Center for Applied Science and Engineering Technology



Lake Superior State University



APPLIED CONCEPTS
ENGINEERING

Forklift Mast Control System for Testing

Team Members:

Dave Burdinie, Ted Clark, Jeremy Jankowske,
Kevin Oliver, Andy Tucker

Faculty Advisor: John Madl

Project Sponsor: PCC Superior Fabrication

Industrial Customer Contact: Joe Dobrowolski

Applied Concept Engineering (ACE) has designed and built a Hydraulic Control System able to perform proof, cycle and end-of-line tests for forklift masts.

Presentation: 1:30 p.m., CASET 212

Demonstrations: 2:15-3:45 p.m., CASET 122



DESIGN OPTION TECHNOLOGIES
AND EQUIPMENT

Integrated Energy Conversion Laboratory

Team Members:

Joe Miskiwi, Brandon Woodworth, Brian Wyllys

Faculty Advisor: Kevin Schmaltz

Project Sponsor: Lake Superior State University

Industrial Customer Contact: Dave McDonald

Design Option Technologies and Equipment worked with LSSU to investigate and develop the Integrated Energy Conversion Laboratory (IECL). The LSSU and National Science Foundation (NSF) funded laboratory is an effort to improve hands-on experience in the area of energy conversion within the School of Engineering and Technology at LSSU.

Presentation: 3 p.m., CASET 212

Demonstrations: 1:30-2:45 p.m., CASET 122



INTEGRATED
AUTOMATION
SOLUTIONS

Robotic System to Assemble a Family of Inner Tie Rods

Team Members:

Jamie Chinn, David Daniels,
Donovan Kennedy, Darren Stark,
Aaron Watts

Faculty Advisor: Jim Devaprasad

Project Sponsor: Dana Corporation

Industrial Customer Contacts:

Kenneth Gies, DANA
Jon Coullard, LSSU

Dana-Cleveland produces several different types of inner tie rods. Integrated Automation Solutions (IAS) proposed and designed a prototype automated system that assembles the various parts of the inner tie rods. The automated system is capable of assembling the five most popular types of tie rods at a minimum rate of 145 assemblies per hour.

Presentation: 2:15 p.m., CASET 123

Demonstrations: 1:30-2 p.m. and 3-3:45 p.m.,
CASET 122



INNOVATIVE CONCEPTS
AND ENGINEERING

Design Validation and Product Validation Hood Latch Tester

Team Members:

Chris Coudert, Ira C. Ewald,
David J. Ferguson, Donald W. Hamilton,
James D. Kucher, Adam L. Veaser

Faculty Advisor: Morrie Walworth

Project Sponsor: DURA Automotive
Systems, Inc.

Industrial Customer Contact: Pat King

This Hood Latch Tester can test 26 different hood latches. It can test two different hood latches at the same time in environmental conditions ranging from -40 to 80 degrees Celsius and up to 95% humidity. Several forces are measured automatically 5000 times a day using an integration of pneumatic, electronic, and mechanical systems that are controlled by state-of-the-art computer software.

Presentation: 2:15 p.m., CASET 212

Demonstrations: 1:30-2 p.m. and 3-3:45 p.m.,
CASET 122

