

ECE 482: Capstone - Computer System Design

www.egr.msu.edu/classes/ece482/

[Project Web Sites](#)



Design Team Projects

Spring 2000

Team #	Project Topic
1	Electronic Acceleration Monitor (see Fall 1999, Team 4) Sponsored by Instrumented Sensor Technology, Okemos, MI
2	Soccer Kick Trainer - Development of a sensor pad and monitor for a soccer shoe to detect proper kicking technique Sponsored by Soccer Zone, Lansing, MI
3	Thermoelectric Mobile Refrigerator - Development of a unit to provide cooling inside a small package
4	Audio Signal Processor - Use of a digital signal processor in an audio application
5	Optical Display (see Fall 1999, Team 6) Affiliated with Physiology Dept. research.
6	Health Care Information Appliance Supported by the IEEE Computer Society International Design Competition (www.computer.org/csdc/)

Fall 1999

Team #	Project Overview
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1	A globe rotates and revolves under computer control in a manner similar to the Earth, while being powered from renewable energy sources. It will be on display at Lansing's Impression 5 Science Center. Sponsored by Greater Lansing United Nations Association.
2	A portable system moves an antenna under motor control to track a satellite across the sky using coordinates from the World Wide Web.
3	A magnetic compass interfaced with a microcontroller determines the heading of an aircraft and notifies the pilot of any error until the course is corrected. Complies with all FCC standards.
4	An inexpensive, accurate, low-power, small-size, light-weight, and self-contained system measures shocks and vibrations to packages or systems. Sponsored by Instrumented Sensor Technology, Okemos, MI
5	Sensors and a micro-valve are interfaced to a microcontroller, all under battery power, to create a smart robotic foot, which is part of a small, autonomous, climbing robot. Affiliated with a DARPA research project.
6	A light emitting source (LED array) displays patterns of light to stimulate an eye cell for use in studies of eye diseases, especially glaucoma. The light source is controllable by an easy-to-use GUI and changes at rates from DC to more than 40 Hz. Affiliated with Physiology Dept. research.
7	A hands-on demonstration explains Radar principles using speed measurements of a radio-controlled car moving along a track. Police radar and sensor-based measurements are compared. Sponsored by MSU Science Theater.
8	A remote collaboration system is created that enables a client anywhere on the web to control a remote-control car and communicate with its operator via an interface with a wearable computer. Affiliated with an NSF research/curriculum project.

Spring 1999

Team #	Project Topic
1	Home Appliance - Development of an energy monitoring unit and fuzzy logic to reduce energy consumption Supported in part by Whirlpool Corp.
2	Speed Measurement - Development of an electronic tuning fork for radar calibration Affiliated with MSU's police traffic radar-testing laboratory.
3	Sustainable Sphere (see Fall 1999, Team 1)

	Sponsored by Greater Lansing United Nations Association. Interdisciplinary with Mechanical Engineering.
4	Internet PPBS - Web-based/wireless monitoring and control of an embedded system (a prototype fluid-flow control system called the Ping-Pong Ball System) Affiliated with an NSF research/curriculum project.
5	Electronic Acceleration Monitor (see Fall 1999, Team 4) Sponsored by Instrumented Sensor Technology, Okemos, MI