



ME363: Selected Topics in Mechanical Engineering  
**ADVANCED MECHATRONICS OF MOBILE ROBOTS**

**Fall Semester**  
**Wednesday Evenings, 6-9 PM**

Instructor: Ericson Mar      Contact: Ericson Mar, Dr. C. Stan Wei

The objective of the course is to build a mobile robot capable of competing in a competitive robot tank battle game. This will introduce concepts of autonomous systems that react to the environment. Topics covered include: digital and analog I/O, contact sensing, IR sensing and range finding, light sensing, sonars, magnetic field sensing, encoders, DC motor actuators, servo actuators, high level microprocessor control, low level microprocessor control, power management, and product prototyping. Students will form teams to compete with each other in a robot competition game where the objective is to accumulate points based on the rules of the game. During the semester, students are expected to demonstrate progress on the development of their robot and complete project assignments that will lead to the final competition-ready robot.

Facilities: This course will take place in the Prototyping Laboratory on the 5<sup>th</sup> floor of the Engineering Building.

Prerequisites: Although this course is a pilot for Advanced Mechatronics (the successor to EID/ME153: Mechatronics), students who have knowledge in either electronics, programming languages, or product prototyping, should be able to do well in this course and contribute to their robot teams.

Instructor permission is required so please contact Ericson Mar (email: [mar@cooper.edu](mailto:mar@cooper.edu); pager: (888) 778-1025 to take this course.