ECE115: Fast Prototyping

Time: Tues/Thurs, 2 pm - 4:50 pm
Location: ECE Makerspace
Instructor: Michael Yip, yip@ucsd.edu

Course Description:
This lab-based, design-focused course will discuss how to prototype a mechatronic solution as quickly as possible. You will gain hands-on skills and experience with design, fabrication, integration, and characterization of practical electronic and mechanical hardware systems. Students will learn to materialize their ideas in the shortest possible time and make design decisions that will result in a cost-effective, robust, and well-designed mechatronic system.

Labs will cumulate to a complete mechatronic or robotic system. The project theme will be announced in the first week of the class. An open house at the end of the quarter will allow you to show your work to friends, family, and the local community.

Learning Objectives:
1. Hands-on skills and experience with design, fabrication, integration, and characterization of practical electronic and mechanical hardware systems relevant to engineering students.
2. Practice using modern rapid prototyping and device equipment and techniques, including CAD, 3D printing, laser cutting, microcontrollers, state machines
3. Experience end-to-end product engineering and development.
4. Experience working as a team to build a functional, intelligent robotic system

This is a hands-on course. A solid time commitment is required. Open lab sessions outside of regular class hours are available and students should expect to use these to work on assembling their project.

Prerequisites: ECE16 or equivalent, or instructor approval