



Description

Microcontroller engineering using popular microcontroller, internal structures and control units, timing, interrupts, memory interfacing, assembly language programming specific to microcontrollers, and interfacing to external peripheral devices.

Prerequisites CST 116

Corequisites CST 133 or EE 133 or EET 216

Lecture/Lab Time

Meeting Room: Wilsonville 220
Meeting Time: Tuesdays 5:30pm

Instructor

Name: Allan Douglas
Title: Associate Professor, EERE Department
Office: Wilsonville 415
Office Hours: By appointment
Office Phone: 503-821-1281
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Textbook

The textbook for this class is recommended but not required. Most of the reference material required to complete the course can be found online. The recommended textbook is:

Arduino Internals by Dale Wheat, 2011 (ISBN 978-1430238829).

Weekly Lab Work

- EE333 is a hands-on, lab-based course. Students will have many opportunities to learn by building microcontroller hardware, interfacing to external devices, and writing software to control peripherals.
- Students are responsible for purchasing the required lab components. A list has been provided on Blackboard.
- Students will work independently on their labs.
- The course will have 8 lab assignments throughout the term. Students will have one week to complete each lab assignment and submit a Lab Report documenting their lab work.
- Many labs will provide opportunities for students to earn extra credit. Extra credit will be worth 5%. If students desire to go further with lab work, they may gain more than 5% extra credit with instructor approval.
- The instructor reserves the right to penalize late Lab Reports by 5% per day after the due date.
- Lab Reports submitted more than 7 days after the due date will not be accepted.

Grading

This course does not have homework assignments or exams. Instead, the course consists of extensive lab work.

- Lab Reports 100% (each is worth 12.5% of the student's overall grade)

Attendance

- Students should attend each lecture and lab; however, attendance is not graded.
- The instructor reserves the right to modify this syllabus and other course parameters by making announcements in class. If a student is not present for the announcement, they will still be subject to any changes announced.

Course Outcomes and Measurement

Outcome	Measurement
Understand how microcontrollers work and understand internal peripherals available on most microcontrollers	Measured via written Lab Reports
Understand serial communications and pulse width modulation with microcontrollers	Measured via written Lab Reports
Understand microcontroller internal memory and control register operation	Measured via written Lab Reports
Understand basic C programming skills and gain exposure to assembly level programming	Measured via written Lab Reports
Understand bootloaders, software download methods, and basic debugging techniques for microcontrollers	Measured via written Lab Reports

Disability Accommodation

Students with a documented disability who require assistance or academic accommodations should contact the office of Disability Services immediately to discuss eligibility. Disability Services staff are located on both the Klamath Falls and Wilsonville campuses, however arrangements can be made to meet with a student on any campus. Meetings are by appointment only, so please contact the Disability Services office at the campus closest to you: Klamath Falls (541) 851-5227 and Wilsonville (503) 821-1305. Specific information and Disability Services forms can be found at www.oit.edu, then go to "Academics" and click on "Student Success Center" and then "Disability Services." This link leads to the department's website:

<http://www.oit.edu/academics/ssc/disability-services>

Academic Integrity at OIT

- Students shall to demonstrate their knowledge with honesty and integrity. OIT considers academic dishonesty to be an unacceptable practice. The complete OIT Student Academic Integrity Policy is available on the OIT web site.