

EE 333 Microcontroller Engineering Course Overview

Oregon Institute of Technology, Wilsonville, Fall 2012

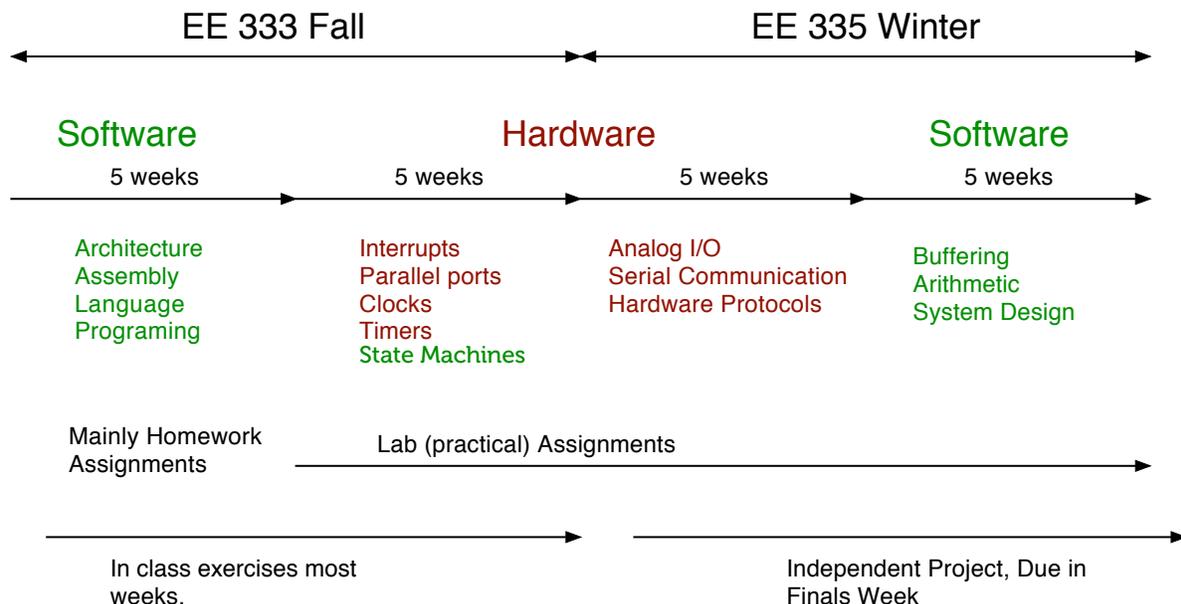
INSTRUCTOR: Tom Almy

PHONE: XXXXX

E-MAIL: XXXX, assignments to XXXX

OBJECTIVES: The student will be able to demonstrate the use of a microcontroller using the Freescale Semiconductor 68HCS12. The student will be able to program and use the various features of the 68HCS12 to perform tasks in measurement, control, and user interaction.

The course catalog states "Microcontroller engineering using popular microcontroller, internal structures and control units, timing, interrupts and memory interfacing, assembly language programming specific to microcontroller, on-chip peripheral devices." We won't be covering memory interfacing this term, but will cover Pulse Width Modulation which is shown in the catalog for EE 335. Here's how the two terms look:



CLASS MEETINGS: We will meet on Tuesdays from September 25 through November 27, starting at 5:30 PM, sharp, in room 252. There will generally be

2 to 2.5 hours of lecture, sometimes with class exercises, followed by lab time, during which the instructor will be available for assistance and to answer questions. Classes end at 9:50 PM. The final lab assignment is due on finals week, December 4, at 5:30 PM.

REQUIRED TEXTBOOK AND HARDWARE: *Designing with Microcontrollers – The 68HCS12*, by Tom Almy, which is on the software package supplied to students for free. Printed copies will be available for \$10. Dragon12-Plus2-DB board and documentation available at www.evbplus.com. The board is \$169 (plus shipping). The board (and textbook) are also used in EE 335, so you will have no additional supply expense next term. You can also use earlier Dragon12P-USB-DB but should not use earlier boards because they are missing features used in the lab assignments.

COMPUTER USAGE: The text, 68HCS12 documentation, and all assignments are accessible in the provided software package. There is also a 68HCS12 simulator program, assembler, and C compiler for use in class or at home. Computer access is necessary outside of class. I strongly recommend doing all work on your own computer. Some weeks there will be (ungraded) in-class exercises which are best done using a computer with the 68HCS12 simulator or the Dragon12 board.

READING ASSIGNMENTS: There are weekly reading assignments from the text and 68HCS12 documentation. Because of time constraints, not all the material is planned to be covered in class, but questions will be answered about all the material so please read in advance of class and have questions ready.

HOMEWORK AND LAB ASSIGNMENTS: There are a variety of assignments during the term, some of which are considered homework and some are considered lab assignments. For convenience, all assignments are given the same weight even though they will vary in difficulty. In general, there is an assignment due in the week following that which the material is covered in class, however lab assignments sometimes vary. It is advantageous to start the assignment in the lab time after lecture in the class period.

All assignments are discussed in class on the day they are due, and must be turned in at the start of the class sessions. Manage your time carefully! All assignments are to be submitted via E-MAIL to XXXXX.

Assignments should be submitted as a single file, PDF preferred, or Microsoft word DOC or DOCX otherwise. The name of the file should be your name and the assignment number.

While students can help each other on the assignments, each student is expected to develop and submit their own individual solution. You may also ask the instructor for advise if you are having difficulties.

Because the unexpected may happen, every student gets a virtual Late Card:

Late Card

Good for one late lab assignment being accepted up to one week late.

Limitations: Only one card per student per term. Cards not transferable. Valid only for EE333, Fall 2012, Tom Almy Instructor. May not be used on the last lab assignment. No cash value. Void where prohibited by law

Use it wisely.

QUIZZES AND EXAMS: There are no quizzes or exams, however the last lab assignment is due December 4th of finals week and must be turned in on time. There will be some in-class exercises which will not be graded, but participation is encouraged since it will help in completing the lab assignments both for EE333 and EE335.

ABSENCES: Students are expected to attend all class sessions except for illness, personal emergencies, or job requirements. That does not mean students are excused from missed assignments. All assignments are due according to schedule. A grade of Incomplete is generally not available for this course.

CELL PHONES: Please turn off cell phones (or have them on "vibrate") during the lectures to avoid disrupting the class.

STUDENT FEEDBACK: For my own benefit in improving my teaching style, there will be a 30 second student feedback form to fill out at the end of each class. In return you will get 0.5% of the final lecture grade no matter what you say. That works out to 5% of the final EE 333 grade available for 10 minutes of work. What a deal! As an additional bonus, you get a chance to ask an anonymous question. Answers to questions are posted on the class forum.

ON-LINE CLASS FORUM: A class forum is used for communication to the entire class or for students posing questions or comments about the course for the class to read. The site is XXXXXX and you will have to create an account in order to use the forum. It is recommended that you check the forum on a daily basis to check for new postings.

GRADING: Numeric grades are converted to letter grades based on the chart, below. There are three homework assignments and seven lab assignments are each worth 9.5% of the total grade. The feedback forms are worth 5% (total).

Numeric Grade	Letter Grade
90 and up	A
at least 80, but less than 90	B
at least 70, but less than 80	C
at least 60, but less than 70	D
less than 60	F