ECE 353
Introduction to Microprocessor Systems

Syllabus Spring ’18

Hoffman

Syllabus & Policies

ECE353 Course Goals

Prerequisite:	ECE/CS 352
Goals:	At the end of this course you will be able to program embedded firmware using good coding practices. Including handling various peripherals and interrupts.
Topics:	ARM Architecture & ARM assembly coding Hardware & Software Development Tools Addressing modes, Stack, Heap, Branching, Subroutines Micro-controller peripherals (A2D, UART, SPI, …) Interrupts and Exceptions

ECE353 Grading

Grading:

- 15% Homeworks (individual, graded on functionality, coding style, commenting)
- 10% [ICE] In class quizzes/exercises (not all code submissions for in class exercises will be graded in detail, but a random sampling will be done, lowest two are dropped)
- 35% Midterm Exams (2 of them)
- 20% Project
- 20% Final Exam
- Final letter grades are on a class curve (exam average (Midterms + Final) has to exceed 60% to pass)

Philosophy: "No Child Left Behind" is not applicable to this course, because it is my intent to treat you like adults. If your work ethic is poor I want that to reflect in your grade. I come from industry. I don't like working with ignorant people, but I don't like working with lazy people even more. We will make an honest effort to grade homework and in class exercise coding submissions, however, you can probably do a half assed job on these and still pick up the majority of the points. Such an effort on homework/exercises will come back to haunt you on the exams and final project.

ECE353 Materials & Conduct

Website:	The moodle website (https://ay17-18.moodle.wisc.edu/prod/course/view.php?id=131#section-0) contains all the instructional content (or links to) necessary for this course.
email:	When asking questions use the email staff_ece353@lists.wisc.edu. This will email both the instructor and the TA(s) and ensure a more timely response. Please include ECE353 in the subject line. I teach more than one class.
Hardware:	You are required to purchase a Tiva LaunchPad, and rent an ECE353 development board.
Software:	Keil uVision 5 is our IDE. It is installed on all CAE windows machines. You can download a free version for your laptop.

ECE353 Materials & Conduct

ICE:

There are **I**n **C**lass **E**xercises that are run as Moodle quizzes almost every class. These "quizzes" will guide you through required knowledge to complete the exercise, and also specify what code you need to write and submit.

You are encouraged to work with classmates to complete ICE's as long as you understand the concepts.

They are a lot of work, but instructional. Submit what you have **no later than 9:30AM** that day.

It becomes critical that you complete each **ICE** as the course goes on, even if you don't complete it by 9:30. The subsequent exercises will build on the results of the previous exercises. Subsequent homeworks and the final project will also rely on the "infrastructure" you built by completing the **ICE**'s.

ECE353 Conduct

Student Responsibility:	There are required readings and video lecturettes to watch for almost every class period. It is vital the student read/watch this material prior to each class period in which that ICE is to be performed.
Homework:	Homework will be graded on an individual basis. You are allowed to consult with classmates on “how to” with regard to homework, but copying of code blocks is not allowed. I will be using an automated code comparison tool to flag for potential code copying. If you use a publicly accessible code repository and your code is copied, that will be treated as academic misconduct. Homework can only be up to 2 days late, and looses 15% each day late.

ECE353 Conduct

Midterm Exams:	Two midterm exams will be given outside of class time during evening hours. These will be closed book, but you will be allowed a 4x6 cheatsheet with writing on both sides. An ARM assembly reference will be provided for the first midterm.
Design Project:	The final design project will be done as a 2 person team. The project requirements will force you to exercise a fairly exhaustive set of everything you learned in this course. The project will be graded via a ½ hour demo/review session with the instructor.
Final Exam:	Yep…there will be one of these too. Not much different than the Midterms, except it is pre-scheduled by the university.