

ECE 382: Embedded Systems I

Lsn	Topic	Quiz	Misc
1	Intro & Overview		
2	uC Comparison and ISA		
3	ISA: Instructions to Machine Code		Code Composer Studio should be installed
4	ISA: Instructions to Machine Code		
5	ISA: Instructions to Machine Code		<code>gitbash</code> should be installed, instructions
6	Code Composer Studio	X	ICE: Code Composer Studio
7	Git Review		ICE: Git
8	Status Register and Flow Control		
9	Stack, Subroutines, and ABI	X	
10	Stack, Subroutines, and ABI		ICE: Stack and Flow Control
11	Lab 1: Assembly Calculator		
12	Lab 1: Assembly Calculator		
13	Memory Mapped IO and Muxes		
14	Polling, Debouncing, and Logic Analyzer	X	
15	Polling, Debouncing, and Logic Analyzer		ICE: DCO and Buttons
16	Lab 2: Stoplight		
17	Lab 2: Stoplight		
18	GR1		
19	GR Review and High Level Language (HLL) Overview		
20	Intro to C and Flow Control		
21	Programming Libraries		
22	Common Data Structures		
23	Common Data Structures	X	
24	Interrupts		
25	Interrupts		ICE: Buttons and LEDs
26	Timers		
27	Timers		ICE: Tones

Lsn	Topic	Quiz	Misc
28	Capture Compare	X	
29	Lab 3: IR Remote		
30	Lab 3: IR Remote		
31	Lab 3: IR Remote		
32	Serial Comm		
33	Serial Comm		
34	Serial Comm		ICE: Serial LCD
35	Analog-to-Digital Conversion		
36	Lab 4: Servo Calibrator	X	
37	Lab 4: Servo Calibrator		
38	Lab 4: Servo Calibrator		
39	GR 2		
40	Wrap Up		

- Homeworks are at the beginning of class (BOC)
- Labs are due on the final day at the end of class (EOC)

Spring 2018 Syllabus

- printable Spring 2018 Syllabus

Instructors

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Course Goals and Objectives

By the end of this course, cadets shall be able to:

1. Utilize the built-in functional units of a specified microcontroller.
2. Write, assemble, link, and run microcontroller code in assembly language.
3. Write, compile, assemble, link, and run microcontroller code in the C programming language.
4. Interpret and explain orally and in writing the functions of a given assembly language or C program as well as laboratory work
5. Evaluate, analyze, debug, and modify a given program to improve its execution of a specified task
6. Demonstrate a working knowledge of the on-board hardware components of a microcontroller and implement an interface between a specified microcontroller and other hardware.
7. Demonstrate the ability to solve well and ill-defined problems

Course Prerequisites

CompSci 110 and ECE 281

Grades

Grade	Grade
90 < A < 100	74 < C+ < 77
87 < A- < 90	70 < C < 74
84 < B+ < 87	67 < C- < 70
80 < B < 84	60 < D < 67
77 < B- < 80	0 < F < 60

	Prog %	Final %
HW	10	5
Quizzes	15	10
GRs	50	40
Labs	25	20
Final Exam		25

Missing Class and the Late Policy

Inform your instructor of absences in advance via email. Please include the reason for the absence and any relevant SCA. Check the SCA to see if instructor permission is required and if it is, make the request prior to the absence. You will be given an Unexcused Absence in CAS if you fail to get permission.

If you plan to miss a class, you *must* take any quiz or GR prior to your departure.

If you are expecting to miss class on the day an assignment is due, you shall turn-in your assignment prior to your departure. Your instructor may grant a no-penalty turn-in extension for absences resulting from illness or other legitimate extenuating circumstances. Cadets shall coordinate late submittals in advance. The late policy for the Department of Electrical and Computer Engineering is as follows:

How Late?	Max Penalty	Max Grade
< 1 day	25%	75%
2 day	50%	50%
3 day	75%	25%
> 3 day	100%	0%

Collaboration and Documentation Policy

You may receive help from any **DFEC faculty member** on the homework. Do not work with other students in the class or who have taken the class previously. Document all help received on work submitted for grading IAW DF policies, or document *none* if your work was completely individual effort.

Homework

Reading assignments are on each lesson page, along with the links and datasheet pages specified at the top of the respective lesson page. Readings should be accomplished **prior** to the designated class in order to be most beneficial.

Graded homework assignments are also given at the top of the class notes and are due BOC the next lesson unless otherwise stated. Not every homework assignment or every problem in the homework assignment will be graded, that is up to the instructor. The expectation is you will do and turn in every homework

assignment. Homework will not be handed back. The answers for every problem can be found in the lecture notes and the readings.

Prelabs, Labs, and Lab Notebooks

Labs will be turned in and graded via Bitbucket unless otherwise stated. If a prelab is assigned, you will turn it in the lesson prior to the start of the lab.

Lab notebooks must follow the lab notebook standards specified on the Labs page. Not following the standard exactly could result in a late penalty until the notebook meets standards.

Exams

All exams are closed textbook and notes. Homework, laboratories, quizzes and classroom work will appear on exams. After the exam, you will not be allowed to keep the exam, but you will be allowed to see it when we go over the solutions.