CECS 262 - Syllabus
C for Embedded Programming
Spring 2018
Instructor: Eric Hernandez

OFFICE HOURS:	M/W 11:30-12:30pm, T/Th 12:30-1:30pm VEC-403 or by appointment		
E-MAIL ADDRESS:	engr.eric@gmail.com		
COURSE WEBPAGE:	http://www.engreric.com/		
LECTURE:	Sec: 1, Class #: 3827,	Fri., 9:00 A.M. to 10:40 P.M.	VEC-518
LABORATORY:	Sec: 2, Class #: 3828,	Fri., 11:00 A.M. to 1:30 P.M.	ECS-412

A. DESCRIPTION

This is an introduction to the world of Embedded Systems using C as the programming language. At the heart of every Embedded System is the Microcontroller. This class will focus on the 8051 microcontroller architecture and on the proper procedural programming techniques for real world interfacing.

B. ORGANIZATION

This is a lecture and lab based course in which topics are presented in the lecture and demonstrated in the lab through a series of projects that build upon each other. It is very important that each lab is completed as most labs will rely on the knowledge gained from the previous one. Successful completion of the course is reliant upon completion of the labs.

C. COURSE OBJECTIVES

1. To introduce students to microcontrollers and embedded systems with C on the 8051.
2. To learn proper procedural coding techniques.
3. To learn the architecture and memory organization of the 8051.
4. To learn real world interfacing schemes and peripherals to create a full embedded system.

D. COURSE TOPICS

Embedded Systems	8051 Architecture	C Programming
Special Function Registers	I/O Programming	In System Programming
Software Debugging	Timers	Interrupts
Motor Control	Sensor Interfacing	Data Acquisition

E. TEXT AND REQUIRED MATERIALS

Textbook:

"C and the 8051", 4th Edition (March 1, 2008), by Thomas Schultz. ISBN: 158961237X, Publisher: Wood Island Prints.

Other Useful Books and Resources:

"The 8051 Microcontroller and Embedded Systems Using Assembly and C", 2nd Edition, by Muhammad Ali Mazidi, Janice Gillispie Mazidi, Rolin D. McKinlay. ISBN: 0-13-119402-X, Publisher: Pearson Prentice Hall, Copyright: 2006.

"Embedded System Design with the 8051", by Han-Way Huang. ISBN: 978-0495-47174-5, Publisher: Cengage Learning, Copyright: 2009.

"C Programming for the Absolute Beginner", 2nd Edition, by Michael A. Vine.ISBN: 978-1-59863-480-8. Publisher: Course Technology, a part of Cengage Learning, Copyright: 2009.

Development Boards:

MDE 8051 Trainer, an 8051 based microcontroller development board, or

Lab Pro51 Board, an 8051 based microcontroller development board, or TBD

Other Supplies:

Breadboard , Wire, Resistors (various values) and other discrete components as required.

Keil uVision 8051 IDE and Simulator.

F. GRADING PLAN

Coursework will be weighted as follows:

1.	Quizzes	10%	Only the 5 highest ones will be counted.
2.	Midterm 1	20%	
3.	Midterm 2	20%	
4.	Labs and Homework	20%	Late labs will lose 5% per **day**.
5.	Final Exam (cumulative)	20%	
6.	Final Project	10%	

A – 100%-90%

B – 89%-80%

C – 79%-70%

D – 69%-60%

F – 59%-0%

The grades will be curved, but you can never get lower than the scale above

G. ATTENDANCE

Although not explicitly recorded, attendance is vital for success in this class. Quizzes may or may not be announced one lecture before and exam material will be discussed throughout. Programming tips and techniques for the labs will also be covered during lecture time.

H. CLASS PREREQUISITES

Prequisite: CECS 174 and 201 with a grade of 'C' or better

I. CHEATING AND PLAGARISM

Cheating and ***plagiarism*** will not be tolerated in this course. Any individual caught cheating on quizzes, homework, lab projects, or the final exam will be punished to the full extent allowed under University regulations. Plagiarism on papers or assignments is not acceptable and work that is plagiarized will not receive credit. Plagiarism is considered cheating. *Note:* any time another person's work is used without giving them proper credit, it is considered plagiarism and cheating.

At a minimum, any student caught cheating will receive no credit for the work concerned, and will receive a reduction of one letter grade from their final course grade.

The official CSULB Policy on Cheating and Plagiarism can be found here:
http://web.csulb.edu/divisions/aa/catalog/current/academic_information/cheating_plagiarism.html

J. COE TUTORING SERVICES AVAILABLE FOR MAJOR CLASSES

The College of Engineering Tutoring Center offers free tutoring for many lower and upper division engineering courses in MAE, CECS, CECEM, CHE and EE. Tutors are available Monday through Friday during the fall and spring semesters between the hours of 9:00am-6:00pm in EN2-300.

Visit the following website for detailed tutoring schedules:

http://web.csulb.edu/colleges/coe/views/essc/academic_success/engineering_tutor.shtml#asp_ETP

K. ADA AND ACCOMMODATIONS:

Students with a disability or medical restriction who are requesting a classroom accommodation should contact the Disabled Student Services at 562-985-5401 or visit Brotman Hall, Suite 270 during 8AM-5PM weekday hours. Disabled Student Services will work with the student to identify a reasonable accommodation in partnership with appropriate academic offices and medical providers. We encourage students to reach out to DSS as soon as possible.

L. FOOD AND HOUSING ASSISTANCE

Any student who is facing academic or personal challenges due to difficulty in affording groceries/food and/or lacking a safe and stable living environment is urged to contact the CSULB Student Emergency Intervention & Wellness Program. The website outlining the resources available is www.csulb.edu/basicneeds. Students can also e-mail supportingstudents@csulb.edu or call 562/985.2038. If comfortable, students may reach out to the professor as they may be able to identify additional resources.