ECE 5770 – Microcomputer Interfacing

Spring 2017

Class:	ENGR 238	ENGR 307
	MF 1:30 pm-2:20 am	W 1:30 pm-2:20 am
Instructor:	Taylor L Peterson	
	EL 176, Taylor.L.Peterson@aggiemail.usu.edu	
Office Hours:	Open door policy	
Teaching Assistant:	Danny Froerer	
Course Website:	Canvas (for assignments, grades, and files)	
Required Texts:	None	
Prerequisites:	ECE 3710 – Microcontroller Software and Hardware;	

Course Description: Synthesis of microcomputer systems, including interfacing, component analysis, signaling requirements, and programming. Fostering the development of new skills. Design of hardware and software interfaces to microcomputers for instruction and control applications. Three lectures, one lab.

Course Objectives:

1. Understand basic analog and digital interfacing to micro-controllers.
2. Interface with various sensors.
3. Interface with various mechanical components.
4. Create a user interface.

IDEA Objectives: The instructor has selected the following objectives for the students end-of-the semester, online assessment

- Developing specific skills, competencies, and points of view needed by professionals in the field most closely related to this course;
- Learning to apply course material (to improve thinking, problem solving, and decisions); and
- Learning fundamental principles, generalizations, or theories.

Lectures: Lectures will only occur during the first half of the semester. They will be used to present interesting topics that pertain to your projects or microcomputer interfacing in general. We will periodically

survey the class for lecture ideas. I will attempt to find professionals and experts to share their skills on these topics. When lectures run short, the remainder of class will be used for team collaboration and to give me a chance to talk with teams individually. I may take attendance so please let me know when you plan to miss class.

Exams: There are no exams. You may cheer… now.

Homework Assignments: All assignments will be listed on canvas, along with any details. It is your responsibility to keep track of the assignments.

Status Updates: After you select your project, you are expected to work on it every week. At the end of each week, you are to prepare a short report of the progress or your work, make an accounting of your time, and set goals for the next week. Periodically, this will be performed as a group. Your two lowest scores will be dropped.

Skill Building: Another regular assignment will include Skill Building. Throughout the semester we will discuss technologies, tools, and skills that will require additional time to master. For each of these assignments, you are to select a new skill, software, or tool you would like to work with. These may be pertinent to your project or may not be. You are to provide a screen shot and a short description on canvas of what you did and learned. These will occur approximately every two weeks. The lowest grade will be dropped.

Projects: The project is the focus of this class. The project must be challenging in nature and encourage growth in the team members. You may work in groups of 1, 2 or 3. Naturally, groups of 3 will have more requirements than groups of 1 or 2.

You and your team are to select a project and propose it to me for review. I have a few ideas for projects that I would like to sponsor, but you can still propose your own. Students who wish to count this project towards concurrent courses or senior projects will need to meet with me and add significant requirements.

At the conclusion of the semester you will demonstrate your project, prepare a project video, create a wiki page, and write documentation. This will all be done as group. Your documentation can either be an extensive written report like you have done in other classes, or you may choose to create an in depth how-to tutorial on a site like instructables.com or similar site. Either way, your documentation should encapsulate the working project so that it could be repeated as well as lessons you learned.

You will individually report on your own performance and your team members at the end of the semester. Treat your teammates well and do your part!

Grades: Your grade will be calculated using the following scale.

90-100	A
80-89	B
70-79	C
60-69	D
0-59	F

Note that students and groups are independently evaluated and do not compete against each other.

Honor Pledge: Students will be held accountable to the Honor Pledge which they have agreed to: I pledge, on my honor, to conduct myself with the foremost level of academic integrity.

Academic Dishonesty: The Instructor of this course will take appropriate actions in response to Academic Dishonesty, as defined the University's Student Code. Acts of academic dishonesty include but are not limited to

1. Cheating:
    (a) depending on the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments;
    (b) substituting for another student, or permitting another student to substitute for oneself, in taking an examination or preparing academic work;
    (c) submitting substantially the same work for credit in more than one class, except with prior approval of the instructor; or
    (d) engaging in any form of research fraud.

2. Falsification: altering or fabricating any information or citation in an academic exercise or activity.

3. Plagiarism: representing, by paraphrase or direct quotation, the published or unpublished work of another person as one's own in any academic exercise or activity without full and clear acknowledgment. It also includes using materials prepared by another person or by an agency engaged in the sale of term papers or other academic materials.

Full text of the Student Code is available here.

Outside Help: The College of Engineering has an Engineering Tutoring Center. Tutoring services are available free of charge to all College of Engineering students. You can find help for any engineering required courses, i.e. math, chemistry, physics, and all engineering classes. The Tutoring Center is located in ENGR 322 and 324. Hours are Monday through Friday 8:00 AM to 5:00 PM with extended hours on Tuesday and Thursday until 7:00 PM.

Students with Disabilities: Students with ADA-documented physical, sensory, emotional or medical impairments may be eligible for reasonable accommodations. Veterans may also be eligible for services. All accommodations are coordinated through the Disability Resource Center (DRC) in Room 101 of the University Inn, (435)797-2444 voice, (435)797-0740 TTY, (435)797-2444 VP, or toll free at 1-800-259-2966. Please contact the DRC as early in the semester as possible. Alternate format materials (Braille, large print or digital) are available with advanced notice.

Differential Tuition: Differential tuition provides support for lab TAs, graders, and the maintenance/upgrade of lab equipment (hardware and software).