Department of Electrical and Computer Engineering

EEL 4740 – Embedded System Design

Session U01

Spring, 2018

Instructor : Dr. Gang Quan
Class Time : Tuesday, Thursday: 2:00 a.m. – 3:15 p.m.
Classroom : Engineering Center 2330
Lab room : Engineering Center 3862 (Microcomputer Lab)
Office Hours : Tuesday, Thursday: 3:15 p.m. - 4:45 p.m. or by appointment
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Course Description

Embedded systems are application specific and processor-based electronic systems. Such systems have now been deeply ingrained in our daily lives, ranging from the use of simple household appliances, to transportation systems, and many medical, communication, recreation and entertainment products. Today, embedded system design is a multi-billion dollar business. The course will provide the fundamental knowledge and hands-on experience for embedded system hardware and software development. The topics include:

- The principles of embedded computing and challenges
- Processors and embedded hardware components
- Embedded software development and analysis
- Hardware/software interfacing
- Processes and operating systems
- System design techniques
- Other topics such as (low power design and real-time computing) may be covered

Prerequisites

EEE 3712 Digital Logic Design and EEL 4709C Computer Design, or permission by the instructor
Grading

Exam: 45%
Labs: 50%
Pop Quizzes and class attendance: 5%

Labs/Projects

The lab projects will be graded totaling a significant portion of the student grades (50%). Students are expected to accomplish and fully understand the labs in a timely fashion. No late project reports will be accepted without valid and documented excuse. This course demands significant amount of lab work. The lab projects are developed based on Xilinx XUP XUPV5-LX110T Development System (http://www.xilinx.com/univ/xupv5-lx110t.htm). Two types of projects will be assigned for this course. The first type of projects is the ones designed by the instructor and will be given substantial guidance. These projects are meant as an opportunity for you to learn the development tools and basic concepts. The second type of project will be designed and implemented by the students on their own. The projects can be team work or individual work, and will be graded based on the outcomes that you demonstrate to the instructor or TAs and project reports that you submit.

Exams and Quizzes

Two written exams will be given for the class which weight total 40% of the final grades. The date and time will be announced in the class. From time to time, short quizzes will be given in the class as a mechanism for measuring the understanding of materials presented in the class. No makeup exams will be given without valid and documented excuse and prearranged with the instructor. Exams will be closed book and will be discussed later in the course.
Academic Responsibility

- Discussion and studying together in groups is encouraged. For individual work submitted, it is expected that each student will submit their own original work. Any evidence of duplication, cheating or plagiarism will result a failing grade for the course.

"Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly to demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook."

- You are required to attend the class in time. Absences are excused for medical reasons and extenuating circumstances only with proper documentation. Conflicts with work and situations regarding personal decisions are NOT acceptable excused absences. Unexcused absences will result in the loss of points from your final grade.