

ECE425 Microprocessor Systems

Spring 2020

Instructor: James Flynn

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Office: JD 1536 (Comm Lab)

Office Hours: W 1P – 2P or by appointment.

Prerequisite: ECE320 Theory of Digital Systems

Corequisite: ECE425L Microprocessor Systems Lab

Textbook: *ARM Assembly Language Programming, Fundamentals and Techniques*, William Hohl, et al. CRC Press, ISBN 978-1-4822-2985-1.

Online Resources:

ARM assembly guide: <http://www.heyrick.co.uk/assembler/>

UM10139 LPC214x User manual, NXP Semiconductors.

ARM Developer Suite, Assembler Guide, ARM.

ARM information center: <http://infocenter.arm.com>

Grading: Three Exams – 100% ****There will be no comprehensive final exam****

Exams: Three exams will be given, the first in the fifth week of the course and the second in the tenth week of the course. The last exam will not be comprehensive and given the last day of class. All exams must be taken at the scheduled time. No make-up exams will be given. All exams will be announced in advance in class and the dates may change slightly.

Exams are closed-book, closed-notes tests. All materials, such as processor specifications and command set, will be provided with the exam.

Homework: Homework will be assigned BUT not collected. Homework solutions will be posted on the instructor's website a week after the assignment date.

Each student's grade will be based upon his/her own work. Any student found cheating on any graded material (whether in class or take home), will not be considered to have met the basic requirements of this course and thus will receive the grade of F FOR THE COURSE. Cheating will also result in the appropriate disciplinary action being taken. +/- grading will be used.

Learning Objectives -- After completing this course the students should be able to:

- Understand microprocessor architecture, ARM 7 in particular
- Write ARM7 assembly language programs with exceptions (interrupts)
- Understand Interrupt, GPIO, Timer, Input Capture, Output Compare, Serial Communication Interface, Analog-to-digital converter.
- Design and program ARM-based application systems.