

ECE240 – Digital Logic

Course Syllabus – Spring 2008

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Web page: <http://www.ece.uidaho.edu/ee/digital/donohoe/ECE240/>

Text: David M. Harris & Sarah L. Harris, *Digital Design and Computer Architecture*, Elsevier, 2007. ISBN 13: 978-0-12-370497-9.

Course Description

ECE 240 Digital Logic (3 cr). Number systems, truth tables, logic gates, flip-flops, combinational and synchronous sequential circuits using Small Scale Integrated Circuits, Medium Scale Integrated Circuits, and programmable devices; intro to digital systems and basic microprocessor architecture. Prereq: Phys 212, or permission of instructor. Coreq: ECE 241.

ECE 241 Logic Circuit Lab (1 cr). Open lab to accompany ECE 240. Design and construction of combinational and synchronous sequential logic circuits. Prereq: Phys 212, or permission of instructor. Coreq: ECE 240.

This is a first course in the concepts of digital system design. Digital systems are everywhere, from laptop computers to cell phones to hearing aids. A modern car has 50 embedded computers that control everything from the engine and the brakes to the stereo. In this course, you will learn what these systems are made of, how they work, and how to design them. The course covers the mathematical language of computing systems, the fundamental building blocks, and how these are put together to make computing devices. In the lab, you will learn to implement digital systems using the VHDL hardware description language to configure programmable logic devices called Field Programmable Gate Arrays (FPGAs).

Grading

Homework: 10%
Quizzes: 20%
Exams: 70%

Homework will be assigned weekly. Homework is due at the beginning of class. In-class quizzes will be given periodically. There will be three in-class exams and a comprehensive final exam.