

Digital Logic Circuits

Course Objectives:

This course introduces the student to the design of digital logic circuits, both combinational and sequential. It covers digital circuits; binary numbers; Boolean algebra and switching functions; gates and flip-flops; combinational and sequential logic circuits; hierarchical design of digital systems; computer-aided design and so on.

Textbooks:

Digital Logic Circuit Analysis and Design, V.P. Nelson, H.T. Nagle, B.D. Carroll & J.D. Irwin, Prentice-Hall, 1995.

- Errata list: at Dr. Nelson's homepage, <http://www.eng.auburn.edu/department/ee/>

Prerequisites:

COMP 1200: Introductory computer programming in a high level language.

Instructor:

Foster Dai
404 Broun Hall
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Office Hour:
TU/TH 3:30pm~4:30pm
fosterdai@auburn.edu

Assistant:

Steven Surgnier
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Email for an appointment.

Office Hour:
M W 2 pm~4 pm

Course Grading:

- Homework 15%
- Quiz 25% (in class, date not announced)
- Midterm exam 25% (in class)
- Final exam 35% (12:00 noon- 2:30 p.m., May 5, 2009)

Topics:

1. Introduction to digital systems
2. Number systems
3. Boolean algebra
4. Switching functions and canonical forms
5. Design of combinational logic circuits
6. Circuit minimization via Karnaugh maps
7. Design of sequential logic circuits
8. Latches and flip flops
9. Counters and shift registers
10. Analysis and synthesis of synchronous sequential circuits
11. Review

- Course Notes/HW/Test Solutions located at: <ftp://ftp.eng.auburn.edu/pub/daifa01/ELEC2200>