

CDA 3201 Introduction to Logic Design Fall 2004

Dr. Hari Kalva

Science and Engineering Bldg. Rm. 422

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Classes: 10 – 11:50 am, Mon and Wed

Office Hours: MW: 11:50 – 1:00 pm,

TTr: 11:30 to 12:30 pm or by
appointment.

Goal: To develop an understanding of digital logic in order to analyze and design simple systems

Objectives:

- To provide fundamental proficiency in logic design
- Be able to simplify Boolean expressions using Boolean Algebra and K-map
- Be able to design small combinational and sequential circuits
- To understand basic techniques (such as algebraic manipulation) to accommodate design requirements
- Be able to build and test simple combinational and sequential circuits using IC chips.

Textbook: Introduction to Logic Design, Alan Marcovitz, Second Edition, McGraw-Hill, 2005.

Text website: <http://auth.mhhe.com/engcs/compsci/marcovitz/index.mhtml>

Course Grading:

Laboratory: 20 %

5 tests (5x10): 50% (9/1, 9/22, 10/11, 11/1, 11/22)

Final exam (comprehensive): 30% (Sunday, December 5, 4:00 - 6:30 PM, GS 119)

Topics:

- | | |
|------------------------------------|--|
| 1. Number Systems | 5. Solving Larger Combinational Problems |
| 2. Basics of Combinational Systems | 6. Sequential Systems |
| 3. Switching Algebra | 7. Solving Larger Sequential Problems |
| 4. The Karnaugh Map | 8. Simplification of Sequential Circuits |

Laboratory (S&E 324A): You will design and build simple digital circuits based on the material covered in the class. For the laboratory experiments, you need a breadboard (to wire chips for the hardware experiments) which is available at the bookstore and the WinBreadboard software that comes with the textbook. You can also buy the breadboard from Radio Shack¹. **Read and follow the Lab Rules.** Have the lab instructor record grades on the Student Grading Sheet and turn that in at the Final Exam. Both the Lab Rules and the Student Grading Sheet are available through Blackboard. Details on obtaining lab accounts and 24-hour card-access to the lab will be provided later. **Lab opens on Wednesday, September 8.** Lab manual and grading sheet will be available from: <http://www.cse.fau.edu/~mplab/>.

Blackboard (blackboard.fau.edu): We will use Blackboard for course related announcements, handouts, reporting grades etc. You can login to blackboard at: blackboard.fau.edu. We will use e-mail for all announcements; make sure you update your e-mail address in the Blackboard and check your e-mail often. Contact me with any login problems.

Course Policies:

1. Each student is required to do his or her own work. Collaborative work may be undertaken only when specifically requested or approved by the instructor. Any academic irregularity (i.e. cheating) will not be tolerated and will result in a 0 on that assignment (with a minimum reduction of one letter grade in the course) and possibly an F in this course.
2. No 'I' grades or make up tests except in extreme and documented circumstances beyond your control.
3. Late labs up to a whole week are graded with 50% off, and after a week you get 0.

Cell phones must be turned off or in silent mode during the class!

¹ RadioShack 6" Modular IC Breadboard Socket, Catalog #: 276-174 Model: 276-174 , \$14.99

CDA 3201 Logic Design -- MW, 10:00 to 11:50 am, FL 420

8/23/2004	
8/25/2004	
8/30/2004	Last day to add/drop
9/1/2004	
9/6/2004	Labor day holiday
9/8/2004	Test 1; Lab Opens
9/13/2004	
9/15/2004	
9/20/2004	
9/22/2004	
9/24/2004	Lab 1 (Expt 1C -- WB) and Lab 2 (Expt 1D - H) due
9/27/2004	Test 2
9/29/2004	
10/4/2004	
10/6/2004	
10/8/2004	Lab 3 due (Expt 3E -- WB)
10/11/2004	
10/13/2004	Test 3, Design Project Assignment
10/15/2004	Last day to withdraw 10/15
10/18/2004	E-mail project teams
10/20/2004	
10/24/2004	Lab 4 due (Expt 5 -- H)
10/25/2004	
10/27/2004	
10/29/2004	Lab 5 due (Expt 9C WB)
11/1/2004	Test 4
11/3/2004	Part 1 of the project due
11/8/2004	
11/10/2004	
11/12/2004	Lab 6 due (Expt 18a -- H)
11/15/2004	
11/17/2004	
11/19/2004	Lab 7 due (Expt 19C w/JK flipflops)
11/22/2004	Test 5
11/24/2004	
11/29/2004	Final Project due
12/1/2004	Reading day; Lab 8 (Expt 21 ii) due
12/5/2004	Final Exam: 4:00 - 6:30 PM GS 119

Lab Assignments

Lab opens: Wednesday, Sept 8 (See schedule on the lab door or download it from www.cse.fau/~mplab)

All experiments from the text, pages 598 - 607 (as modified below).

Those labeled "Hardware" (H) must be implemented using the chips, board (which you must purchase) and IDL 800 Logic Lab available in Room SE-324A. Chips and wires are available in SE-324. See pp. 583 - 587.

Those labeled WinBreadboard (WB) are to be implemented using the simulator, which is one of the tools included on the CD-ROM packaged with the book. See pp. 587 - 589.

The last two labs can be implemented either way.

Due

Lab 1	Experiment 1c	WinBreadboard	September 24
Lab 2	Experiment 1d	Hardware	September 24
Lab 3	Experiment 3e	WinBreadboard	October 8
Lab 4	Experiment 5	Hardware	October 22
Lab 5	Experiment 9C	WinBreadboard	October 29
Lab 6	Experiment 18a	Hardware	November 12
Lab 7	Experiment 19c	either	November 19
		using JK flip flops	
Lab 8	Experiment 21 ii	either	December 1

The last day lab is open: Wednesday, December 1