BASIC COURSE INFORMATION
Course prefix, number(s), and title: ECE 275: Digital Design
Number of credits: 4 *(Undergraduate)*
Term and year: Fall 2014

Instructor's name: Dr. Scott C. Smith
    Office location: ECE 101 B
    Office hours: Tuesday and Thursday: noon – 2:00
    Contact information: 701-231-7608*;* scott.smith.1@ndsu.edu

BULLETIN DESCRIPTION
Introduction to computer arithmetic, designing combinational circuits, and designing basic sequential circuits. Prereq: MATH 105. F, S

COURSE OBJECTIVES
Upon successful completion of this course, students will understand logic gates, Boolean algebra, combinational logic circuits, and related devices, and will be able to analyze and design arbitrary combinational digital systems and basic sequential circuits. Specifically, students will be able to demonstrate understanding of the following concepts:

• Number Systems and Digital Arithmetic
• Logic Gates and Boolean Algebra
• Combinational Logic Design
• VHDL
• CMOS Logic Design
• Flip-Flops
• Counters and Registers
• Mealy and Moore Machine Design and Optimization

REQUIRED TEXTS
S. Brown and Z. Vranesic, 3rd edition of Fundamentals of Digital Logic with VHDL Design, McGraw-Hill, 2009.

OTHER REQUIRED STUDENT RESOURCES
Laboratory and Homework Assignments will be announced in class and posted on the instructor's website:
http://www.ndsu.edu/pubweb/~scotsmit/

SUPPLEMENTAL RESOURCES
TA: John Doe, ECE 227, john.doe@ndsu.edu

COURSE SCHEDULE/OUTLINE/CALENDAR OF EVENTS

Week	Topic	Book Location
1	Introduction	Chapter 1
1-3	Number Systems and Computer Arithmetic	Chapter 5
4-5	Boolean Algebra	Chapter 2
5	**EXAM #1**	
6-7	Combinational Logic Design	Chapter 3 and 4
8	CMOS Logic Design	Chapter 3
9-10	Digital Hardware	Chapter 5 and 6
11	Introduction to VHDL	Chapter 2 and 6
12	**EXAM #2**	
12-13	Memory Elements	Chapter 7
13-14	Registers and Counters	Chapter 7
15-16	Mealy and Moore Machine Design and Optimization	Chapter 8
16	**Exam 3**	
17	**Optional Comprehensive Final Exam**	

- *Instructor reserves the right to modify course schedule.*

Exam 1	100 points
Exam 2	100 points
Exam 3	100 points
Homework	100 points
Lab	100 points
Optional Final	100 points
Total	500 or 600 points

A	[100% - 90%]
B	(90% - 80%]
C	(80% - 70%]
D	(70% - 60%]
F	(60% - 0%]

- Final grades may be curved depending on class average

CLASS ATTENDANCE POLICY:
Attendance is not required, but strongly encouraged.

MISSED AND LATE ASSIGNMENTS/EXAMS POLICY:
Assignments are due AT THE BEGINNING OF CLASS on the specified date. No late assignments will be accepted. Assignments will consist of homework problems from the text and/or handouts, and laboratory assignments, including a pre-lab and post-lab report, which in total will account for 2/5 or 1/3 of your final grade (depending on whether or not you take the optional final).

AMERICAN DISABILITIES ACT FOR STUDENTS WITH SPECIAL NEEDS STATEMENT

Any students with disabilities or other special needs, who need special accommodations in this course are invited to share these concerns or requests with the instructor and contact the Disability Services Office as soon as possible.

STUDENT VETERANS AND SOLDIERS STATEMENT

Veterans and student soldiers with special circumstances or who are activated are encouraged to notify the instructor in advance.

ACADEMIC HONESTY STATEMENT

The academic community is operated on the basis of honesty, integrity, and fair play. NDSU Policy 335: Code of Academic Responsibility and Conduct applies to cases in which cheating, plagiarism, or other academic misconduct have occurred in an instructional context. Students found guilty of academic misconduct are subject to penalties, up to and possibly including suspension and/or expulsion. Student academic misconduct records are maintained by the Office of Registration and Records. Informational resources about academic honesty for students and instructional staff members can be found at www.ndsu.edu/academichonesty.

Each student is required to sign the College of Engineering Honor Code. As outlined in the Honor Code, all students are required to have a signed 'Honor Pledge' form in their CoE advising file. Students are only required to sign the form once. Link to additional information:
http://www.ndsu.edu/cea/undergraduate_students/honor_code/