University of Wisconsin - Madison
College of Engineering [EGR]
Last Offered: 2015-2016 Fall [1162]
Direct Link to this Syllabus:

1. E C E 555, Digital Circuits and Components
2. Credits: 3  Contact Hours: 4.0
3. Textbook and Materials: CMOS VLSI Design: A Circuits and Systems Perspective; Neil Weste and David Har; 4; 2010

a. Other Supplemental Materials: None

• Specific Course Information:

a. Brief description of the content of the course (Course Catalog Description): Principles and characterization of logic circuits. Design and analysis techniques for applied logic circuits. Transmission lines in digital applications. Families of circuit logic currently in use and their characteristics.
b. Pre-requisites or Co-requisites: ECE 340; ECE/Comp Sci 352
c. This is a Selected Elective course.

• Specific Goals for the Course:

a. Course Outcomes:

1. Students will be able to understand principles and characterization of logic circuits.
2. Students will be able to design and analyze applied logic circuits.
3. Students will be able to understand families of circuit logic currently in use and their characteristics.
4. Students will be able to implement large-scale integrated (LSI) circuits.
5. Students will be able to perform structured design, design rules checks, and circuit layout.
**ABET Student Learning Outcomes:**

(a) Ability to apply mathematics, science and engineering principles.
(b) Ability to design and conduct experiments, analyze and interpret data.
(c) Ability to design a system, component, or process to meet desired needs.
(d) Ability to function on multidisciplinary teams.
(g) Ability to communicate effectively.
(j) Knowledge of contemporary issues.
(k) Ability to use the techniques, skills and modern engineering tools necessary for engineering practice.

**Brief List of Topics to be Covered:**