

UNIVERSITY OF MARY HARDIN-BAYLOR
COMPUTER SCIENCE CLASS SYLLABUS
Spring, 2011

GENERAL INFORMATION

Course Number:	ENGR 2430
Course Title:	Electrical Circuit Theory
Number of Credits:	4
Location of Class:	Davidson Building, Room 101,121
Meeting Time:	1:00–3:20 T,TH (lab: Monday, 2:00 to 3:20)
Professor:	Dr. Edwin Armstrong.
Office:	Room 106 Davidson Building
Office Hours:	On-line at: http://tinyrealm.com/~efa/
Office Phone:	(254) 295-5418
Email:	earmstrong@umhb.edu

COURSE DESCRIPTION

This course will study the analysis and design of electrical circuits and power sources for linear circuit elements. The tools and lab methods will be discussed for doing a practical analysis of circuits. Topics covered will be Ohms law, Kirchhoff's law, mesh and node equations, Network reduction techniques, Superposition, Thevenin and Norton equivalent circuits, resistive network analysis, sinusoidal steady-state analysis, power and the transient analysis of simple circuits.

Other topics covered, in less detail, will be analog and digital circuit design, and analysis including operational amplifier linear circuits, digital combinational logic circuits, and computer interface circuits which combine both digital and analog devices for interfacing physical systems.

The average student spends between 3 - 8 hours per week working on problems and assigned work (keep up, if you start falling behind, ask for help early). Assignments will be given out in class and posted on the ENGR 2430 web-page, along with the class forum - used for class interaction and help; Web-link: <http://tinyRealm.com/~efa/engr2430/>

COURSE OBJECTIVES

The student must gain a good understanding of methods and tools for doing circuit analysis and design. They will understand the interconnected natural of circuit components, flowing from simple component groups to complex subsystems. The skills attained in this course are fundamental to the understanding and success in upper division courses.

At the completion of this course students are expected to:

- Understand the tools and methods necessary for circuit analysis.
- Be able to analyze and modify basic circuits for a desired purpose.
- Be able to recognize and properly use basic circuits.
- Have a basic understanding of digital logic
- Be able to use Capacitors and first order filters.
- Understand Operational amplifiers and their use as active filters.

COURSE MATERIALS:

Textbooks:

Circuits (Hardcover)

by [Fawwaz T Ulaby & Michael M Maharbiz](#) (

NTS Press; 1st edition (2009)

□ ISBN-10: 1934891002

□ ISBN-13: 978-1934891001

Our bookstore should carry this book. Also, <http://half.com/> or <http://amazon.com/>

Should carry it. You might check out Kindle books, cheaper and easier to carry...

Other items:

A flash drive is required for this class (a 2 to 4 Gig pen drive).

COMPUTING LABORATORY

Current account on the CS server will be required for which you have paid a laboratory fee. Sufficient disk space on the server should be available.

COURSE POLICY AND PROCEDURES

1. Grading: The final grade calculation will be reached according to the distribution described on page 63 of the 2002-2004 UMHB Catalog. The final course grade will be computed by the following percentages:

Class participation & Daily Assignments	30%
Tests (2): + FINAL	50%
Laboratory Projects	20%
2. Attendance: The student is expected to attend **ALL** scheduled classes and will be held responsible for all class work and assignments. Continued absences will result in an unsatisfactory grade report for the course. To be counted present, a student must be in the classroom during the scheduled class or lab time for as least 80% of schedule time.
3. Tests: All students are required to be present for a test. If an extreme emergency occurs, and you cannot make the test time, the student should make every effort to contact the professor by email, telephone or in person to receive permission to miss the test. Permission will be granted only in the case of extenuating circumstances.
4. Makeup Tests: Students desiring a Makeup Test must make arrangements with the professor to take the test. A Makeup Test must be scheduled during office hours **BEFORE** the next scheduled test. If a student fails to take a Makeup Test before the next scheduled test, that student will receive a ZERO for the test missed.
5. Assignments: All assignments will be due on the **DUE-DATE (normally Monday's)**. They are due at the beginning of a class period.
6. Final Exam: The final exam will **NOT** be comprehensive. **NO MAKEUP WILL BE GIVEN FOR THE FINAL EXAM.**