Course Syllabus

ECE 2A  
Circuits, Devices, and Systems  4 units  
(Required)

Catalog Description:
Introductory circuit analysis; op-amps and op-amps circuits; phasors and AC analysis; 
first and second order transient analysis. Introduction to the use of test instruments 
(oscilloscope, multi-meter, function generators, power supplies).

Prerequisites:
Prerequisites: Mathematics 3A-B-C with a minimum grade of C; and, Mathematics 5A 
with a minimum grade of C (may be taken concurrently); Physics 3 or 23 (may be taken 
concurrently); open to electrical engineering, computer engineering, and pre-computer 
engineering majors only.

Text, References, and Software:
2006.

Topics Covered and Course Goals:
1. Understand how to apply circuit analysis techniques to a wide variety of passive 
   and active circuits. The techniques include: nodal analysis, KCL, KVL, voltage 
   and current division, superposition, series/parallel combinations, and source 
   transformations.

2. Proficient with analysis and application of circuit elements in time and frequency 
   domains including: voltage and current sources, dependent sources, resistors, 
   capacitors, inductors, diodes and opamps.

3. Proficient in the use of complex arithmetic and its application to steady-state AC 
   analysis.

4. Understand and can demonstrate the use of laboratory instruments for circuit 
   measurements. These include: DMM, function generator, oscilloscope and power 
   supply. Must demonstrate good circuit prototyping techniques and the ability to 
   write well-organized and complete lab reports.

Class/Laboratory Hours:
Lecture, 3 hours; laboratory, 3 hours.

Contribution to Criterion 5:

Contributes to the one and one-half year of engineering topics, primarily engineering sciences.

**Contribution to Program Outcomes:**

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Prepared by: Stephen Long  
Date: September 12, 2007