

EEE 202 CIRCUITS I

Instructor: Dr. Keith E. Holbert Email: Holbert@asu.edu
Office Hours: MW, 9:30–11:00 a.m. and Tu, 1:30–3:00 p.m. in ERC 581; (480) 965-8594
Class Meeting Info: MW, 12:15–1:30 p.m. in COOR 184
Semester Exams: Scheduled for February 20 and March 31
Final Exam: Wednesday, May 7, 2008 from 10:00–11:50 a.m.

Textbook: R.M. Mersereau, J.R. Jackson, *Circuit Analysis: A Systems Approach*, Prentice-Hall, 2006.

Class Website: <http://www.eas.asu.edu/~holbert/eee202/eee202.html>

Lab Website: <http://class.fulton.asu.edu/eee202lab/>

Course Objectives: Students are/can:

1. proficient in basic analysis, design, and measurement of linear analog electrical systems important across engineering disciplines
2. use AC steady-state analysis on linear circuits
3. use Laplace transforms to analyze linear circuits and characterize linear circuits
4. design active linear circuits to implement a desired transfer function

Course Description: Principles for analyzing linear and nonlinear circuits. Uses SPICE and MATLAB. Design and measurement of linear analog electrical systems. Lecture, lab. Fee. Prerequisite: EEE 101 (or its equivalent). Pre- or corequisites: MAT 274 (or 275); PHY 131, 132.

Topics: Textbook Chapters: 1–10

Homework: The homework assignments will be posted on the class web page. Homework is expected to be turned in on time, which is defined as before the start of class on the due day. Presentation and methods for arriving at the answer are just as important as the mathematical answer; solutions should be neat and logical (see class website for an example problem solution). For complete credit: (1) show all work, and (2) box the answer and include the units. To assist you in defining what a proper solution format is an Example Problem Solution has been posted at the class webpage. Students may work together on the homework, but copying is unacceptable: the ASU *Academic Integrity Policy* (AIP) is incorporated herein by reference.

Laboratory

Each student must register for the laboratory component of this course as labs are scheduled on set days and times. Laboratory begins January 22 in GWC 273.

Grading “Standard” scale with \pm using 90-100 "A", 80-90 "B", 70-80 "C", etc.

Homework & Pop Quizzes	15%
Laboratory	20%
Semester Exams (2)	40%
Final Exam	25%

SEMESTER TEACHING PLAN
(MW Class; Spring 2008)

The textbook sections (given in parenthesis below) should be read **before** the class meeting that day.

Week	Date	Lecture Topic	Homework
1	1/14	Introduction; Circuit Elements; Ohm's Law; KCL (1-1 → 1-4)	
	1/16	Capacitors; Inductors; Dependent Sources; KVL (1-4 → 1-8)	
2	1/21	### MLK Holiday ###	
	1/23	Voltage and Current Division; Superposition (2-1 → 2-3)	Hmwk #1 Due
3	1/28	Nodal Analysis (2-4)	
	1/30	Loop (Mesh) Analysis (2-5 → 2-7)	Hmwk #2 Due
4	2/ 4	Resistor Combinations; Source Transformation (3-1 → 3-2)	
	2/ 6	Thévenin's and Norton's Theorems (3-3 → 3-6)	Hmwk #3 Due
5	2/11	Operational Amplifiers (4-1 → 4-2)	
	2/13	Op Amp Circuits (4-3 → 4-4)	Hmwk #4 Due
6	2/18	Review for Exam #1	
	2/20	*** Exam #1 ***	
7	2/25	Laplace Transformations (5-1 → 5-3)	
	2/27	Inverse Laplace Transformations (5-4 → 5-5)	
8	3/ 3	Differential Equation Solutions of Transient Circuits (6-1)	Hmwk #5 Due
	3/ 5	Laplace Transform Solutions of Transient Circuits (6-2)	
<i>Spring Break</i>			
9	3/17	Analysis Methods for Transient Circuits (6-3 → 6-6)	Hmwk #6 Due
	3/19	Systems Concepts (7-1 → 7-2)	
10	3/24	System Responses (7-3 → 7-5)	Hmwk #7 Due
	3/26	Review for Exam #2	
11	3/31	*** Exam #2 ***	
	4/ 2	Phasor Relationships; Impedance (8-1 → 8-2)	
12	4/ 7	AC Circuit Analysis Techniques (8-3)	
	4/ 9	AC Power (8-4 → 8-6)	Hmwk #8 Due
13	4/14	Spectrum Representations; Frequency Response (9-1 → 9-3)	
	4/16	Bode Plots (9-4 → 9-5)	Hmwk #9 Due
14	4/21	Passive Filters (10-1)	
	4/23	Active Filters (10-2 → 10-3)	Hmwk #10 Due
15	4/28	Review for Final Exam	
	4/30	--- Reading Day ---	
	5/ 7	*** Final Exam ***	

Email: Important information may be sent to students via their ASU email account. Be sure to read your ASU email or forward it to an email account that you do read regularly.

Conduct: Thank you in advance for adhering to the ASU *Student Code of Conduct* and preventing *disruptive classroom behavior*, such as cell phone ringing, arriving late to class, irrelevant side conversations, and inappropriate computer usage.

Recommendation: If you have not successfully completed (\geq 'C' grade) the differential equations and second semester of physics, you are advised not to take this course until you have done so; otherwise, you are doing yourself a disservice.