School of Electrical and Computer Engineering
ECE2040
Summer 2007, GT Lorraine

Instructor
Professor George F. Riley
Office: GTL 005
EMail: riley@ece.gatech.edu
Webpage: http://users.ece.gatech.edu/~riley/ece2040/
Office Hours: Weekdays, 10:15 - 11:15 and by EMail appointment

Textbook

Grading
Quizzes: 30%
Midterm 1: 20%
Midterm 2: 20%
Final Exam: 20%
Class Participation: 10%

Homework
Homework problems will be assigned nearly every week. HOMEWORK WILL NOT BE COLLECTED OR GRADED. However, all exams and quizzes will be based on homework problems, so students should work out the homework assignments on their own. Each week’s homework solutions will be covered in class at the end of the week.

Exams
All exams will be held on the last day of the week. Quizzes will be 30-40 minutes consisting of 1 - 3 problems. The Midterm exam will be 50 minutes long. There will be no makeup exams, excepting students who have a legitimate documented medical excuse and approved in advance.

Course Materials
All course materials (handouts, homeworks, homework solutions, etc.) will be posted on the class web page, or sent to students via EMail, or both. Students are expected to check EMail daily, and are responsible for all course materials regardless of how it is disseminated.

Collaboration
Students are encouraged to work together on homework and help each other frequently. Of course, for exams, all work must be done individually.

Attendance
Class attendance is mandatory.

Goals
This course introduces students to the essential circuit analysis methods for linear circuits. Students will learn methods for solving circuits in both time and frequency domain for DC and AC circuits. Students will also become familiar linear operational amplifiers and notions such as complex power, superposition, Thevenin and Norton Equivalents, frequency response and Bode plots.
Course Outline, tentative, subject to change

Week 1, May 16 – 18. Read Chapters 1, 2, 3 (HW1). Introduction, basic concepts, review. Circuits elements, Kirchoff’s laws, series and parallel elements

Week 2, May 21 – 25. Read Chapter 4 (HW2). Node analysis, mesh analysis, source transformation, superposition (Quiz 1)

Week 3, May 28 – June 1. Read Chapters 5 and 6 (HW3). Thevenin and Norton Equivalents, maximim power transfer, operational amplifiers

Week 4, June 4 – 8. Read Chapters 6 and 14 (sec 1–5) (HW4). Operational Amplifiers, Laplace transforms (Quiz 2)

Week 5, June 11 – 15. Read Chapter 14 (sec 7 – 14), Chapter 7 and Chapter 8 (HW5). Laplace transforms, inductors and capacitors, first and second order differential equations (Midterm Exam)  
   The Midterm Exam will be Thursday, June 14.

Week 6, June 18 – 22. Read Chapter 8 and 14 (HW6). Superposition, series, parallel, mesh, node for LRC. Transfer functions, linearity, stability, forced response.

Week 7, June 25 – June 29. Read Chapter 10 (HW7). AC circuits, sinusoids, complex numbers, phasors, AC series and parallel, frequency plots. (Quiz 3)

Week 8, July 2 – 6. Read Chapter 10 (continued).


Week 10, July 16 – 20. Chapter 13 (HW9). Frequency Response, transfer functions, gain, phase shift, Bode plots with complex poles and zeros. Transfer functions from Bode plots. (Quiz 5)

Week 11, July 23 – 27. Final Exam (TBD).