Department of Electrical Engineering, University at Buffalo

EE 203: Circuit Analysis 2 (Spring 2007)

Course Description: EE 203 Circuit Analysis 2, Lecture, 4 Credits.

A continuation of EE 202. AC steady-state average and reactive power, three-phase power delivery circuits; input-output analysis, transfer functions and frequency response. OP amps and active filter synthesis. Circuit design using SPICE.

Time and Location: Spring 2007, M/W/F, 2:00 PM-2:50 PM, 109 KNOX

Instructor: Kwang W. Oh, SMALLab (nanobioSensors & MicroActuators Learning Lab)
Department of Electrical Engineering, 215E Bonner Hall
kwangoh@buffalo.edu

Office Hours: Friday 3:00 PM – 4:30 PM or by appointment

Prerequisites: EE 202 Circuit Analysis 1 (Ch 1, Ch 2, Ch 3, Ch 4, Ch 6, Ch 7, Ch 8)

Recitations: EE 202 Circuit Analysis 2 R 1: M, 12:00 PM - 12:50 PM, 322 CLEMEN
EE 202 Circuit Analysis 2 R 2: W, 03:00 PM - 03:50 PM, 322 CLEMEN

There will be no recitations during the first week of classes. TA will assist you in doing your homeworks during this recitation. Please attend this recitation if you want to succeed in this course.

Textbooks: Electric Circuits, 7th ed, Nilsson and Riedel, Prentice Hall, 2004.

TAs: Weihua Gao (wgao@buffalo.edu): R1, Office Hours: Tuesday 2:00 – 3:30 PM, 217 Bonner Hall or by appointment
Kanke Gao (kgao@buffalo.edu): R2, Office Hours: Monday 5:00 – 6:30 PM, 217 Bonner Hall or by appointment

Course Webpages: UBLearns → All course handouts can be found there. Lecture material may be posted there, but most will not be. Visit there often for announcements!

Objectives: By the end of the course, students will:
1. be able to analyze AC steady state circuits
2. be able to analyze 'S' domain circuits
3. become familiar with the operation and design of freq-dependent circuits
4. be able to use SPICE to perform DC, transient, and AC analysis of circuits

Topics: 1. Sinusoidal Steady-State (Chapters 9, 10)
2. Laplace Transform (Chapters 12, 13)
3. Operational Amplifier (Chapter 5)
4. Frequency Selective Circuits (Chapter 14)

5. Active Filter Circuits (Chapter 15)

Computer Usage: As needed for SPICE analysis. A calculator that performs rectangular to polar conversions and can perform complex algebra is required.

Grading: **-** 7 Homeworks (21%)
- 1 Final Project (10%)
- 3 Midterms (45%, 50-min-exam) $\rightarrow$ Exam #1 (15%, HW#1, HW#2, HW#3), Exam #2 (15%, HW#4, HW#5), Exam #3 (15%, HW#6, HW#7)
- 1 Final Exam (24%, 2-hour-exam) $\rightarrow$ HW#1, #2, #3, #4, #5, #6, #7

All exams are (modified) from homeworks, and they are open books and closed notes.

The cut-offs for each letter grade: A (90%), A- (85%), B+ (80%), B (75%), B-(70%), C+ (65%), C (60%), C- (55%), D (50%), F (<50%)

Projects: TBA, see UBLearns

Schedule: Summary (2 lectures), Ch 9 (7 lectures), Ch 10 (5 lectures), Ch 12 (5 lectures), Ch 13 (6 lectures), Ch 5 (5 lectures), Ch 14 (4 lectures), Ch 15 (4 lectures)

Depending on the class background and the level of difficulty encountered in discussing each topic, the number of lectures devoted to any specific topic could be revised upwards or downwards as deemed appropriate by the instructor.
If the instructor can not teach specific lectures due to his planned schedule and/or meetings, TA will teach the lectures, instead of the instructor. $\rightarrow$ For example, TA will teach one lecture on Feb/05/2007 (Monday).

Hints for Success: Attend class / Attend your recitation / Do the homework /
Do the homework AGAIN / Work together when appropriate, learn from each other / Do the homework AGAIN AND AGAIN / Visit during instructor's and TAs' official hours and ask questions.

Late Work: **Missed homeworks/exams cannot be made up $\rightarrow$ Missed homeworks/exams will result in a grade of zero (illness only with a physician's note).**
Incompletes given only for extreme hardship cases. Do not plan on getting an incomplete if you are doing poorly.

Academic Dishonesty: "The university has a responsibility to promote academic honesty and integrity and to develop procedures to deal effectively with instances of academic dishonesty. Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect for others' academic endeavors.* By placing their name on academic work, students certify the originality of all work not otherwise identified by appropriate acknowledgments."   taken   from   http://undergrad-catalog.buffalo.edu/archive/9900/integrit.htm
* Adapted from the University of Wisconsin's Student Disciplinary Guidelines Examples of academic dishonesty in this class include, for example: Plagiarizing material from web sites Plagiarizing material from reports or project assignments that have been completed by another student in the course or by students who took the course in previous semesters Knowingly sharing solutions with another student (discussing problems is fine) If a student is found to have committed academic dishonesty, that student will receive a zero on the assignment, quiz, or exam. If the student is found to commit academic dishonesty a second time, the student will receive an "F" in the class. If you have questions about plagiarism, please see examples at: http://undergrad-catalog.buffalo.edu/policies/course/integrity.shtml, http://www.northwestern.edu/uacc/plagiar.html and http://www.princeton.edu/pr/pub/integrity/pages/plagiarism.html