

EE 411 Circuit Theory – Fall 2009

LECTURE T-TH 12:30AM-2:00PM, ENS 115.

RECITATIONS: F 12:00PM-2:00PM, ENS 126 (U. 16355), M 3:00PM-5:00PM, ENS 109 (U. 16360)

(Lecture and recitation times may be swapped occasionally)

Professor: Dr. Alexis Kwasinski, ENS528, akwasins@mail.utexas.edu, 232-3442. Office hours: M 1:30 – 3:00 pm and W 12:00 to 1:30 pm.

TA: Amir Toliyat, email TBA. Recitation hours shown above.

Course Home Page: <http://users.ece.utexas.edu/~kwasinski/EE411SFa09.html> (contains notes, and solutions to homework and tests)

Textbook: C.K. Alexander, M.N.O. Sadiku, *Fundamentals of Electric Circuits*, Third or Fourth Edition, McGraw-Hill, 2006. The fourth edition can also be used.

Course Description: Linear circuit elements; nodal and mesh analysis; operational amplifiers; capacitance and inductance; simple transient response; sinusoidal steady state analysis; Bode plots; three-phase circuits; transformers; two-port networks (Z-parameters and Y-parameters); computer-aided analysis and design. Three lecture hours and two recitation hours a week for one semester. Prerequisite: Electrical Engineering 302 or 302H with a grade of at least C; credit with a grade of at least C or registration for Mathematics 427K; and credit with a grade of at least C or registration for Physics 303L and 103N.

Schedule:

Th., Aug. 27 Introduction and review. Chaps. 1, 2.
Week 1 (Aug. 31). Complex numbers. Nodal and mesh analysis Appendix A9, Ch 3.
Week 2 (Sept. 7). Mon. holiday. Nodal and mesh analysis cont. Chap. 3.
Week 3 (Sept. 14). Superposition. Thevenin and Norton equivalents. Chap. 4.
Week 4 (Sept. 21). Op amps. Capacitors and inductors Chap. 5 and 6. (*Dr. K. at ECCE*)
Week 5 (Sept. 28). First-order circuits. Chap. 6 and Chap. 7.
Week 6 (Oct. 5). **Test 1 on Tues.** Second-order circuits. Chap. 8.
Week 7 (Oct. 12). Second-order circuits, cont. Chap. 8.
Week 8 (Oct. 19). Sinusoids and phasors. Sinusoidal steady-state analysis. Chap. 9 and Chap. 10.
(*Dr. K at INTELEC 2009*)
Week 9 (Oct. 26). Sinusoidal steady-state analysis, cont.. Single-phase power. Chap. 10 and 11.
Week 10 (Nov. 2). Single-phase power cont. Three-phase power. Chap. 11 and 12.
Week 11 (Nov. 9) Three-phase power cont.. Magnetic circuits Chap. 12 and 13
Week 12 (Nov. 16) Class on Monday. Magnetic circuits and transformer. Frequency response Chap. 13 and 14
(*Nov. 17 Dr. K. at INTELEC 2010 Management Committee*)
Week 13 (Nov. 23) Thanks giving week **Test 2 on Tues.**
Week 14 (Nov. 30) Frequency response cont. Two-port networks. Chap. 14.

Two One-Hour Tests (30%): Cumulative. These tests cover class materials through the preceding Friday. One 8½ x 11” sheet of notes (both sides) is permitted.

Recitation Sessions and Quizzes (35%): Recitation sessions begin on Monday, Aug. 31. They will focus on solving the homework problems and other problems related to classroom lectures. Unless one of the two hourly tests is scheduled for a session, a fifteen-to-twenty minute quiz will be given at the end of many recitation sessions that covers the most recent homework assignments. Your lowest grade will be dropped in determining your recitation quiz average. You must be present for the entire recitation session to take the quiz. There are no make-ups, but if you miss a quiz, keep a log book and staple an explanation sheet your final exam.

Homework: Homework will be assigned each lecture period. Working in teams is encouraged. Homework will not be turned in for grading. Instead, recitation quizzes will, for all practical purposes, be your homework grade.

Final Exam (25%): Cumulative. Given during the official UT-scheduled time period and location (<http://registrar.utexas.edu/schedules/099/finals/index.html>, tentatively Thursday, December 10, 2:00–5:00 pm). One 8½ x 11” sheet of notes (both sides) is permitted.

Grading method: Plus/minus grading will be used.

On-Time Attendance (10%). A sign-in sheet will be provided at the beginning of each lecture and recitation session. If you are late, please do not ask to sign in late. Instead, keep a log book of your absences or late arrivals, and staple an explanation sheet to your final exam.

Makeup Tests: Missed tests will be handled on a case-by-case basis. There is no makeup test for the final. Zero points will be given to missed finals.

Disclaimers:

Although unlikely, this syllabus and course topics may change according to my judgment as to what is best for the class. Any changes will be declared in class. General course schedule and administrative deadlines follow The UT Austin calendar, long session 2009-2010, which can be found at <http://registrar.utexas.edu/calendars/09-10/index.html>.

Any student with a documented disability who requires academic accommodations should contact Services for Students with Disabilities at 471-6259 (voice) or 232-2937 (Video Phone) as soon as possible to request an official letter outlining authorized accommodations.