

EE 2351 Electric Circuits II, CRN: 22542

Instructor: Scott Starks, Ph.D., P.E.

Office: Room E230B, CREATE Office (above the breezeway between the Engineering and Class Room Buildings)

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Course Location: Room 305, Class Room Building

Time: Tuesdays and Thursdays 12:00 – 1:30 PM

Course Description

Electric Circuits II (3-0) Continuation of Electric Circuits I to include operational amplifier, transient analysis of RC, RL, and RLC circuits, Laplace transform in circuits, frequency-selective circuits, Bode diagrams and two-port circuits.

Prerequisites for Course

([EE 2350](#) w/C or better) AND ([PHYS 2421](#) w/C or better) AND ([MATH 2326](#) w/C or better)

Textbook

Circuits by Ulaby, National Technology and Science Press, 2nd edition.

Grading Policy

Three Exams and the Final Exam. Each counts 25% of the grade.

Letter grades will be assigned according to the following scale:

90 – 100 % A

80 – 89 % B

70 – 79 % C

60 – 69 % D

59 or below F

Exams

Exams will be announced in class at least one week in advance. It is a requirement to take exams on their scheduled dates and times. Missed exams will only be allowed for students with medical reason that prevents their attendance (written notification from doctor required), military duties (notification to be provided in advance) and for other compassionate reasons. Business related activities, car problems, and over sleeping are not considered compassionate reasons. To avoid unforeseen problems, please plan on arriving at the University early on exam days. The final exam is comprehensive.

Course Outcomes

At the completion of the course, students shall be able to:

1. Analyze simple circuits containing ideal operational amps and understand the role of negative feedback (Critical).
2. Determine the natural and step responses of both RL and RC circuits (Critical).
3. Analyze circuits using the Laplace transform (Critical).
4. Derive the transfer function along with magnitude and phase spectral plots of an AC circuit (Critical).
5. Design first-order lowpass, highpass, bandpass, and bandreject filters (Critical).
6. Characterize two-port networks using Bode plots (Critical).

Course Topics

Operational Amplifiers – Chapter 4 (Exam 1 – February 10)

RC and RL First-Order Circuits – Chapter 5 (Exam 2 – March 5)

Circuit Analysis by Laplace Transform – Chapter 6 (Exam 3 – April 7)

Frequency Response of Circuits and Filters – Chapter 9 (Final Exam – May 12, 1:00 – 3:45)

Please note that the dates for Exams 1, 2, and 3 are subject to change.

The Final Exam is COMPREHENSIVE.

Attendance Policy

Students are expected to attend all classes. Students who miss 3 or more classes **may be dropped** from the class.

Cell Phone Policy

Cell phones are not permitted during the lecture. Students are required to turn off cell phones before entering the classroom. Cell phones should be placed out of sight (like in a purse or backpack). Students should **NOT** receive or make calls/text messages during class. **Students using cell phones during class will be asked to leave.**

Calculator Policy

Students are required to bring a scientific calculator to class daily. These are needed to calculate numeric answers on problems in class. **Only calculators that meet the guidelines set forth by the National Council for Engineering and Engineering Surveyors (NCEES) will be allowed on Exams.** The website that follows gives more specific information.

<http://ncees.org/exams/calculator-policy/>

Students may ask the Instructor for approval to use a scientific calculator not identified on the NCEES list. The Instructor will allow other models of scientific calculators provided that they do not have memories capable of storing formulas, algorithms, problem solutions or other information. These requirements are set to protect the integrity of exams.

Lecture and Reading Assignments

This course will be taught as an interactive course, with daily student-student discussions and instructor feedback during every session. The course material is directly linked to the textbook, and students will be required to complete reading assignments prior to material being covered in the class as listed in the class schedule. The reading assignments will be correlated with short lectures which will be used to introduce problem solving methods and to reinforce critical concepts. The lectures will be linked to group problem solving sessions in class and additional homework exercises.

Academic Dishonesty

“Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts. Proven violations of the detailed regulations, as printed in the *Handbook of Operating Procedures*, and available in the Office of the Dean of Students and the homepage of the Dean of Students at www.utep.edu, may result in sanctions ranging from disciplinary probation, to a failing grade in the work in question, to a failing grade in the course, to suspension or dismissal, among others.” (Quote from the Undergraduate and Graduate Catalog)

Accommodation under the Americans with Disabilities Act

If you feel you may have a disability that requires accommodation, contact the Disabled Student Services Office at 747-5148, go to room 106E Union, or e-mail dss@utep.edu.