EE 2350 (CRN 14411)
ELECTRIC CIRCUITS I
SYLLABUS FOR FALL 2020

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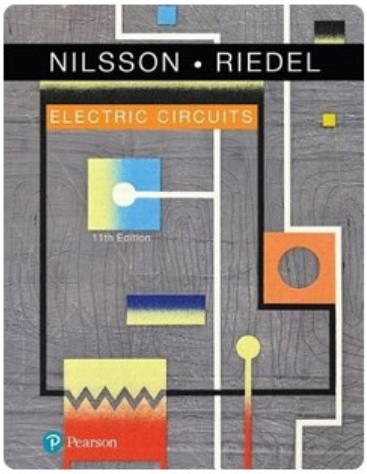
OFFICE HRS.: By appointment on Blackboard Collaborate or Webex (*https://utep.webex.com/meet/herivescon*). You can can find this syllabus on the left-hand navigation panel, as well as prerecorded lectures on the "Blackboard Collaborate Ultra."

CLASS TIME/PLACE: EDUC 202, T 12:00 PM – 1:20 PM. This course is scheduled to have limited synchronous sessions for approximately the first month of the semester (F2F meetings once a week), and will continue to be asynchronous for the rest of the semester.

TEXTBOOK: J.W. Nilsson and S.A. Riedel, **Electric Circuits**, 11th Edition, Prentice Hall, 2014.



WEB TOOLS:
Mastering Engineering by Pearson. (Please see information on "How to register in Mastering Engineering")
Go to https://www.pearson.com/mastering.2.
Under Register, select Student.
Enter your instructor's course ID: **erives70398**.

Circuit Tutor by Dr. Brian Skromme from ASU. (Please see information on "How to login into Circuit Tutor")
An ID will be assigned to you so that you can login into the website:
https://www.circuittutor.com/web/

EE 2350, Fall 2020

CATALOG DESCRIPTION: Introduction to systematic methodologies for the analysis of electric circuits in DC and AC steady state. Use of simulation tools for steady state circuit analysis. Can be taken concurrently with **PHYS 2421** and **MATH 2326**.

PREREQUISITES: EE 1305, MATH 1312, PHYS 2421+ and MATH 2326+, each with a grade of C or better. (PHYS 2421 and MATH 2326 may be taken concurrently.)

COURSE LEARNING OUTCOMES: Students completing EE 2350 will be able to:

- Understand terminology used in conjunction with electric circuits of ideal circuit elements.
- Mathematically model electric systems using ideal resistive, inductive, and capacitive elements.
- Apply phasors and impedance transformations to the analysis of electric circuits.
- Apply various systematic methods (node, mesh, terminal equivalency, and circuit theorems).
- Apply various circuit analysis techniques to study circuits that include operational amplifiers.
- Apply various circuit analysis techniques to study energy and power in dc and ac circuits.
- Apply software tools to the analysis of electric circuits in steady state.

COURSE GRADING:

- Two Partial Exams 40%
- Homework (Mastering Engineering and Circuit Tutor) 30%
- Quizzes 10%
- Comprehensive Final Exam 20%

You can can find your grades on the left-hand navigation panel on "My Grades."
Late work will be assessed a late penalty of 30%.

GRADE DISTRIBUTION: Grades will be based on the standard scale

90% - 100%	A
80% - 89%	B
70% - 79%	C
60% - 69%	D
Below 60%	F

TOPICS TO BE COVERED FROM THE TEXTBOOK: (the exact order, pages and/or sections and subsections will be listed in homework assignment handouts). See the Appendices for very useful review and reference materials!

CALENDAR: Tentative schedule

Dates	Topics
Aug. 24 – Sep. 24	**Chapter 1: Circuit Variables** a) Electrical Engineering b) Circuit Analysis: An Overview c) Power and Energy **Chapter 2: Circuit Elements** a) Voltage and Current Sources b) Electrical Resistance (Ohm's Law) c) Kirchhoff's Laws
Sep. 25 – Oct. 24	**Chapter 3: Simple Resistive Circuits** a) Resistors in Parallel and Series b) Voltage-Divider and Current-Divider c) Delta-to-Wye Equivalent Circuits **Chapter 4: Techniques of Circuit Analysis** a) Node-Voltage Method and Special Cases b) Mesh-Current Method and Special Cases c) Source Transformations d) Thévening and Norton Equivalents e) Maximum Power Transfer

	f) Superposition
Week of Oct. 25	**Exam I**
Oct. 24 – Nov. 24	**Chapter 5: Operational Amplifier** a) Op-Amp Terminals b) Terminal Voltages and Currents c) Inverting, Summing, Difference, and Noninverting-Amplifier Circuits **Chapter 6: Inductance, Capacitance, and Mutual Inductance** a) The Inductor b) The Capacitor c) Mutual Inductance
Nov. 24 – Dec. 3	**Chapter 9: Sinusoidal Stead-State Analysis** a) The Sinusoidal Source b) The Phasor c) Kirchhoff's Laws in the Frequency Domain d) Source Transformation and Thévening-Norton Equivalents e) Node-Voltage and Mesh-Current Methods f) The Transformer **Chapter 10: Sinusoidal Stead-State Power Calculations** a) Instantaneous Power b) Average and Reactive Power c) The rms Value and Power Calculations d) Maximum Power Transfer
Week of Dec. 4	**Exam II**
Dec. 7 – Dec. 11	**Final Exam (According to UTEP's Academic Calendar).**

ACADEMIC INTEGRITY:
Please review the statements below and UTEP's Web page on Policy on Academic Integrity at: http://sa.utep.edu/osccr/academic-integrity/. Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. Violations will be taken seriously and will be referred to the Dean of Students Office for possible disciplinary action. Students may be suspended or expelled from UTEP for such actions.

CENTER FOR ACCOMMODATIONS AND SUPPORT SERVICES (CASS):
If you have a disability and need classroom accommodations, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass.

Revised by Dr. Hector Erives in July 2020.