EE 2351: Electric Circuits II (HYBRID)
CRN: 18565
Fall 2020

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COURSE DESCRIPTION

Analysis of transient behavior in first-order and second order circuits. Circuit analysis using the Laplace transforms. Network functions and frequency response representation of circuits. Steady-state analysis of circuits fed by non-sinusoidal periodic signals using Fourier series. Two-port networks. Computer-aided analysis of circuits.

COURSE PREREQUISITES

EE 2350, PHYS 2421, and MATH 2326, each with a grade of C or better.
You are not allowed to take any of these courses concurrently.

COURSE OBJECTIVES OR EXPECTED LEARNING OUTCOMES

Students completing EE 2351 will be able to:

- Apply circuit analysis techniques to analyze first and second order circuits in the time domain.
- Understand the concepts or natural and forced response, zero-input, zero-initial conditions in the analysis of electric circuits.
- Apply Laplace transform techniques to represent circuits in the frequency domain, analyze using systematic methods (node, mesh, terminal equivalency, and circuit theorems), and derive input-output representations such as transfer functions.
- Understand the concept of resonance and apply circuit analysis techniques to series and parallel RLC circuits.
- Apply Fourier series to analyze circuits fed by non-sinusoidal periodic sources in steady state.
- Understand and determine using circuit analysis techniques representations of two-port circuits.
- Apply software tools to the analysis of electric circuits in the frequency and time domain.

SOFTWARE

- MULTISIM and MATLAB available for download through the ETC office, to get your own free license.
  ETC
- Limited access through my.apps.utep.edu
  My. Apps

- You will also need regular access to a computer, stable, consistent internet, Blackboard, and your UTEP email account.
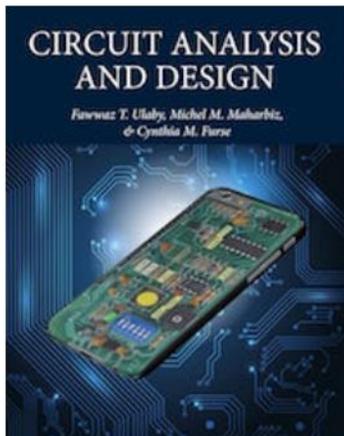
TEXTBOOK: (ALSO RECOMMENDED REFERENCES)
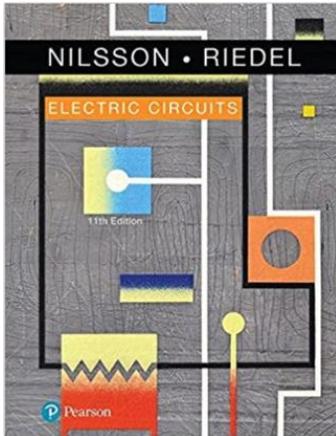
- Electric Circuits 11th ed., by J.W. Nilsson and S.A. Riedel. Prentice Hall 2019 (Course Requirement)

ISBN: 9780134814117

You can find this book on:

Amazon: Electric Circuits

UTEP bookstore: Electric Circuits

- Circuit Analysis and Design Michigan Publishing 2018, by F.T. Ulaby, M.M. Maharbiz and C.M. Furse (Recommended)

You can find a free PDF version of this book on:

Ulaby Textbook

COURSE ASSIGNMENTS AND GRADING POLICIES

- Each student must complete all assignments.
- Each exam/quiz must be taken the designated date unless arrangements are made in advance.
- There will be <u>NO EXTRA CREDIT</u>
- Online exams, with the exception of F2F exams, will be submitted via blackboard.
- All assignments must include a complete analysis and an underline solution for each problem.
- **Quizzes**: You will be assigned a quiz every 2 weeks. It will be submitted and graded using <u>Mastering Engineering.</u> Quiz dates may vary.
- **Homework**: Homework is an essential part of the course. You will be assigned Homework every week. It will be submitted and graded using <u>Mastering Engineering.</u>

Mastering Engineering is an online system that is supported by Pearson, the publisher of the textbook. You will be required to register for Mastering Engineering. For this you will need several things.

1. <u>Course ID:</u> najera41829
2. <u>Pearson account:</u> You will either create your Pearson student account or identify your existing account.
3. <u>Access code or buy access:</u> Either enter a student access code or buy access using a credit card or PayPal. A student access code card may be provided with your new textbook or you may be able to purchase this separately.
4. <u>Student Enrollment:</u> Use the link below to enroll in Mastering Engineering
   [Mastering Engineering Enrollment](#)

Mastering Engineering provides tutorial homework problems designed to emulate the instructor's office hour environment. The system can guide you through engineering concepts with self-paced individualized coaching. It will provide you with feedback that is specific to any errors you may happen to make. Also you may elect to receive optional hints that are capable of breaking a complex problem down into simpler steps.

- **F2F Exams:** Exams will be conducted in the classroom at the specified dates shown below. Exam days may vary.

Grade Distribution:

		Exam Dates:	
Quizzes	10%	Exam I	9/17*
Four Exams (I – IV)	80%	Exam II	10/15*
Homework	10%	Exam III	11/5*
		Final Exam - Comprehensive	12/3*

* Exam days may vary.

Grading Scale:

A: 90% - 100%   B: 80% - <90%   C: 70% - <80%   D: 60% - <70%   F: 0 - <60%

CLASS MEETINGS

- Lecture: Held on Blackboard Collaborate Ultra Tuesdays and Thursdays from 5:30 pm to 6:30 pm.
- Virtual Office Hours: By appointment via Blackboard Collaborate Ultra

TECHNOLOGY REQUIREMENTS

Course content is delivered via the Internet through the Blackboard learning management system (LMS). Ensure your UTEP e-mail account is working and that you have access to the Web and a stable web browser. Mozilla Firefox and Google Chrome are the most supported browsers for Blackboard; other browsers may cause complications with the LMS. When having technical difficulties, update your browser, clear your cache, or try switching to another browser.

You will need to have or have access to a computer/laptop, scanner, a webcam, and a microphone. You will need to download or update the following software: Microsoft Office, Adobe, Flashplayer, Windows Media Player, QuickTime, and Java. Check that your computer hardware and software are up-to-date and able to access all parts of the course.

If you encounter technical difficulties beyond your scope of troubleshooting, please contact the Help Desk as they are trained specifically in assisting with technological needs of students.

ATTENDANCE POLICY

Because this is an online course, attendance is determined by class participation online. Participation is determined by completion of the following activities:

- Presence in daily lectures on Blackboard Collaborate Ultra
- Reading/Viewing all course materials to ensure understanding of assignment requirements
- Completing all assignments (Exams, Quizzes, and Homework)

NETIQUETTE

- Always consider audience. Remember that members of the class and the instructor will be reading any postings.

- Respect and courtesy must be provided to classmates and to instructor at all times. No harassment or inappropriate postings will be tolerated.

- When reacting to someone else's message, address the ideas, not the person. Post only what anyone would comfortably state in a F2F situation.

- Blackboard is not a public internet venue; all postings to it should be considered private and confidential. Whatever is posted on in these online spaces is intended for classmates and professor only. Please do not copy documents and paste them to a publicly accessible website, blog, or other space. If students wish to do so, they have the ethical obligation to first request the permission of the writer(s).

LATE WORK POLICY

Quizzes

- Quizzes will be due on Thursday before midnight (11:59 PM). No late work will be accepted.

Exams

- Online exams will be available on Thursday afternoon and will be due on Sunday before midnight (11:59 PM). No late work will be accepted.

- F2F exams will be proctor in the classroom once a month at the specify date and time announced by the instructor. No late work will be accepted.

Homework

- Homework assignments will be due 48 hours after assignment becomes available. No late work will be accepted.

DROP POLICY

To drop this class, please contact the Registrar's Office to initiate the drop process. If you cannot complete this course for whatever reason, please contact me. If you do not, you are at risk of receiving an "F "for the course. The deadline to drop this course with an automatic W is October 30th.

ACCOMMODATIONS POLICY

The University is committed to providing reasonable accommodations and auxiliary services to students, staff, faculty, job applicants, applicants for admissions, and other beneficiaries of University programs, services and activities with documented disabilities in order to provide them with equal opportunities to participate in programs, services, and activities in compliance with sections 503 and 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act (ADA) of 1990 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Reasonable accommodations will be made unless it is determined that doing so would cause undue hardship on the University. Students requesting an accommodation based on a disability must register with the UTEP Center for Accommodations and Support Services.

SCHOLASTIC 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. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as ones' own. Collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. All suspected violations of academic integrity at The University of Texas at

El Paso must be reported to the [Office of Student Conduct and Conflict Resolution (OSCCR)](#) for possible disciplinary action. To learn more [HOOP: Student Conduct and Discipline.](#)

STUDENT RESOURCES

UTEP provides a variety of student services and support:

- [UTEP Library](#): Access a wide range of resources including online, full-text access to thousands of journals and eBooks plus reference service and librarian assistance for enrolled students.
- [Help Desk](#): Students experiencing technological challenges (email, Blackboard, software, etc.) can submit a ticket to the UTEP Helpdesk for assistance. Contact the Helpdesk via phone, email, chat, website, or in person if on campus.
- [University Writing Center (UWC)](#): Submit papers here for assistance with writing style and formatting, ask a tutor for help and explore other writing resources.
- [Math Tutoring Center (MaRCS)](#): Ask a tutor for help and explore other available math resources.
- [History Tutoring Center (HTC)](#): Receive assistance with writing history papers, get help from a tutor and explore other history resources.
- [Military Student Success Center](#): UTEP welcomes military-affiliated students to its degree programs, and the Military Student Success Center and its dedicated staff (many of whom are veterans and students themselves) are here to help personnel in any branch of service to reach their educational goals.
- [RefWorks](#): A bibliographic citation tool; check out the RefWorks tutorial and Fact Sheet and Quick-Start Guide.