

Syllabus for EENG 2610 Section 001

University of North Texas, College of Engineering

Department of Electrical Engineering

EE2610: Circuit Analysis

Section 1: 3 Credit Hours Fall 2026

General course information. Instructor name, contact information as well as TA name and contact information are shown. Class meeting times are presented.

Instructor:	Dr. Edgard Muñoz-Coreas
Office Hours:	MW 4PM - 5:30PM** at NTDP E258*** or by appointment
Contact:	Edgard.Munoz-coreas@unt.edu
Lecture:	MW 1:50PM - 3:10PM at NTDP D201
Teaching Assistant:	Afrin Sultana
TA Office Hours TA Office TA Contact	Thurs: 2-4 PM -E 258 -AfrinSultana@my.unt.edu

In the event the Instructors take ill or unforeseen circumstances (such as COVID pandemics) course delivery may be temporarily modified as outlined in the Zoom Section of this syllabus

** If the instructor arrives late to office hours they may be extended at the discretion of the instructor.

*** In the event the instructor needs to change the location of an instance of office hours, the alternate location will be announced to the class.

Description:

The purpose of this course is to introduce you to circuit elements and the analysis of electric circuits. This course covers electrical elements, sources, interconnects (wires), Ohm's law, Kirchoff's law, superposition, Thevenin's theorems, sinusoidal analysis. Purely resistive circuits, circuits with operational amplifiers (OP AMP) and circuits with reactive elements (RL, RC circuits) are introduced.

Prerequisite(s)

MATH 1720 (Calculus II) with a C or better.

Corequisite(s)

PHYS 2220 (Electricity and Magnetism) /PHYS 2240 (Electricity and Magnetism Laboratory) (MATH 3410 (Differential Equations I) and EENG 2611 (Circuit Analysis Lab) for electrical engineering students) with a C or better in each course.

Textbook (required)

Fundamentals of Electric Circuits, 7 th Edition, 2021, Author: Charles Alexander and Matthew Sadiku, Publisher: McGraw-Hill, ISBN-13: 9781260226409

Additional material, as required, shall be provided on Canvas.

Textbook (reference)

Differential Equations Computing and Modeling, 4th Edition, 2007, Author: C. Henry Edwards and David E. Penney, Publisher: Pearson, ISBN-13: 9780136004387

Introduction to Electric Circuits , 8th Edition, 2010, Author: Richard C. Dorf and James A. Svoboda, Publisher: Wiley, ISBN-13: 9780470521571

Course Topics

Topic	Topic Description	Book Chapters	Learning Outcomes
1	Course Introduction – Voltage, Current, Power, Tellegen’s, Circuit Elements, Ohm’s Law, KVL, KCL	1,2	CLO-1, CLO-2
2	Resistor Combinations, Wye/Delta, Sources	2	CLO-1, CLO-2, CLO-3
3	Nodal and Loop Analysis	3	CLO-2
4	Linearity, Superposition, Thévenin, Norton, Maximum power transfer	4	CLO-3, CLO-7
5	Op-Amps Model and Circuits	5	CLO-4
6	Capacitors, Inductors, Combinations	6	CLO-5
7	First-order Circuit, Transient Response, Pulse response, RC Op-Amp circuits	7	CLO-4, CLO-5
8	Second-order circuits, oscillations	8	CLO-4, CLO-5
9	AC Analysis: sinusoids, forcing functions, phasors, phasor diagrams, circuit analysis, instantaneous and average power, power factor.	9,10	CLO-6, CLO-7
10	AC Polyphase Circuit Analysis: Power, Maximum Power Transfer, RMS, Power factor	11,12	CLO-6, CLO-7, CLO-8
11	Coupled magnetic circuits, Transformers	13	CLO-9

12	Laplace Transform, Frequency Response, Bode plots, filters, resonance (time permitting)	14,15	CLO-6
13	Passive and Active Filters (time permitting)	15,16	

Course Learning Outcomes

The Learning Outcomes for this course are as follows. The objective of this course is that, by course's end, the student should be able to:

CLO-1: Understand abstracted lumped circuit model, the attributes of circuit elements (including dependent/independent voltage/current sources, Resistances), Ohm's law.

CLO-2: Analyze lumped circuit models using Kirchhoff's laws (KCL and KVL), nodal method, and loop method.

CLO-3: Be fluent with basic circuits (i.e., dividers, resistor combinations and transformations), and circuit analysis methods including linearity, superposition, Thévenin, Norton

CLO-4: Ability to analyze Op-Amp models and circuits.

CLO-5: Understand the reasoning of the analysis methods for transients in linear DC circuits with capacitors and inductors, including first order and second order circuits.

CLO-6: AC circuits: Phasor method, impedance method, and basic frequency-domain analysis methods.

CLO-7: AC circuits: concepts of average and instantaneous power, RMS, and maximum power transfer.

CLO-8: AC circuits: three phase circuits.

CLO-9: Learn how to analyze circuits utilizing transformers (ideal) and coupled coils/mutual inductance.

The course learning objectives correspond to ABET Criterion 3. Student Outcomes items 1 and 7 which are as follows:

an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Canvas

Course interaction shall be through Canvas. Course materials shall be provided through canvas. Modules containing reference materials and worked problems shall be presented through Canvas weekly. All homework assignments shall be administered through Canvas. In the event of a suspected misprint or error please notify the instructors right away so it can be examined and, where applicable, corrected.

Students should immediately report any technical problems to the UNT University Information Technology Student Help Desk (helpdesk@unt.edu or 940.565.2324) as well as the instructor. The instructor and the

UNT University Information Technology Student Help Desk Team will work with the student to resolve any issues at the earliest possible time.

Grading

The Grading scale for this course is as follows:

Grade scale for the course.

F	D	C	B	A
≤ 59.99%	60.00% - 69.99%	70.00% - 79.99%	80.00% - 89.99%	90.00% ≤

The grading breakdown for this course is as follows:

Breakdown of course grade for this course

Breakdown of Grading	
Midterms (2):	40% (20% apiece)
Final:	22%
Homework:	38%

Grading procedure for the course is outlined as followed:

Homework shall be graded using the scale shown in the Table . No curving shall be applied.

Examinations shall be graded using the scale shown in the Table. Curving shall be applied to each midterm examination as deemed necessary. Should we deem curving necessary, the procedure used will be provided to the class. *Students whose test scores are each a C or higher should receive a passing grade for the examination component of the final grade at the end of computation. The calculation of the final grade is presented shortly.*

Extra credit opportunities for this course are as follows. *No additional opportunities for extra credit will be offered.*

Students with no more than two unexcused absences from lecture shall receive 1% extra credit on their final grade (resulting in a maximum possible percentage score of 101% for the course). Duration of attendance and number of missed lectures shall be used in determining if a student qualifies for extra credit. Attendance shall be collected in-class.

Should the class response rate for the SPOT exceed 50%, the class shall receive 0.3% extra credit on the *homework* component of the final grade (resulting in a maximum possible percentage score of 100.3% for the Homework component of the course).

Should the SPOT response rate exceed 75%, the class shall instead receive 0.6% extra credit on the *homework* component of the final grade (resulting in a maximum possible percentage score of 100.6% for the Homework component of the course).

Calculation of Final Grade

Note: The "final percentage grades" that appears on Canvas are defined as $\frac{\text{Points Earned}}{\text{Total Points}}$ which is not how your final grade will be computed in this course. It is not possible to adjust the "final percentage grades" shown on Canvas to reflect how final marks are computed in this course, students should refer to this section of the syllabus when determining their status in this course.

The following outlines the procedure to produce the final grades in this course. Any and all curving shall be applied to the final raw scores for the course where applicable. The final score shall be calculated as follows:

$$\text{Grade} = \text{Midterm}_1 \cdot 0.2 + \text{Midterm}_2 \cdot 0.2 + \text{Final} \cdot 0.22 + (\text{Homework} + \text{SPOT}) \cdot 0.38 + \text{Attendance} \cdot 0.01$$

Where the variables Midterm_1 , Midterm_2 , Final , Homework represent the percentage score earned for each respective component of the course.

In summary: *Students who (i) have examination scores at or above the reported means and (ii) achieve high marks on homework and attendance should receive a passing grade (i.e. C or better) for the course at the end of computation.*

Course Policies

Any and all ADA accommodations shall supersede these policies where applicable.

Homework

Homework assignments will be given throughout the semester to allow for students to practice what they have learned in lecture and the course readings. Exercises from the course text and from the instructors will be included in assignments.

Students are encouraged to seek assistance from the instructors and each other. However, everyone must turn in their own individual work. Any evidence of simply copying other's work (including canvas references) will be viewed as academic dishonesty and handled as outlined in this syllabus. Any evidence of the use of "artificial intelligence tools" will be viewed as academic dishonesty and handled as outlined in this syllabus. Homework shall be graded as soon as possible. Unless stated otherwise in writing, worked solution sets shall be made available for review no later than one week after the due date and no sooner than three days after the due date. After an assignment is returned, you have two weeks to contest any grade issues.

Homework shall be submitted through Canvas. Students are expected to use good time management.

Homework submitted one day late will be penalized 10%. Homework submitted two or more days late will receive a zero. Excuses for homework shall be permitted only for excused absences outlined in [UNT policy 06-039](#)[Links to an external site.](#). Students who need to request an excused absence should contact the instructors promptly. Students should be prepared to prove the need for the excused absence.

Email Communication

The instructors shall only respond to messages from UNT email accounts or from UNT canvas email.

Students are asked to include the course name and section number in the subject line of all email messages.

This guarantees your messages shall not be dismissed as spam. The instructors shall respond to messages as soon as possible.

Midterm and Final Examinations

Midterm examinations shall take place during regular class time. Students shall have the whole class period (1 hour and 20 minutes for midterms, 2 hours for final) to complete the examination. *Examinations shall be closed-book and closed-class-notes. All personal devices (telephones, "smart" watches, etc.) shall be turned off and put away.* Students shall be able to make use of both sides of a 8.5 x 11 sheet for notes. The time display on the login screen of the classroom computers may be used as a timepiece. This information shall be included in the instructions for each examination.

Examination grades shall be returned as soon as possible after the completion of the test. A worked solution to a version of the examination shall be provided no earlier than two days after all students have taken the examination. There shall be a examination review for each test. The review shall take place before the examination during either (i) regular class time and/or (ii) the regularly scheduled office hours. After an examination is returned, you have two weeks to contest any grade issues.

Excuses for examinations shall be permitted only for excused absences outlined in [UNT policy 06.039Links to an external site.](#). The instructors should be contacted promptly in the event a student need to request an excused absence. Students should be prepared to prove the need for the excused absence.

Lecture and Attendance Policy

All students are strongly encouraged to attend lecture. Students are expected to have reviewed the textbook readings outside of class. Students are encouraged to review the module material as there will be additional worked problems and reference material. The reading [schedule is posted on the course schedule](#). New modules content will be released for each course topic.

In lecture I shall assume students have done the readings. Where appropriate, the instructors may recommend students have specific course pages for reference. Course principles and their application to problems will be emphasized in lecture. Students are strongly encouraged to ask questions during class. Notes from each lecture will be made available on canvas no later then one week after each lecture. If the instructors are late arriving to class, it is due to circumstances beyond our control. In the event of instructor lateness, students are asked to remain for 15 minutes past the scheduled class start time before departing. In the event of unforeseen absence, I shall communicate my situation and provide instructions as soon as possible.

Students with no more than two unexcused absences from lecture shall receive **1%** extra credit on their final grade. All excused absences are outlined in [UNT policy 06-039Links to an external site.](#). Attendance shall be collected in-class. *Please return the attendance sheet to the instructors by the end of class.* If (i) an

attendance sheet was issued at the beginning of class and (ii) the filled out attendance sheet is not returned to the instructors by the end of the class, the instructors, at their discretion, may deduct a permitted unexcused absence from each member of the class. If the instructors do not produce an attendance sheet before the end of a given lecture, then all students shall be considered present for that day. *It is the responsibility of the student to confirm that the attendance sheet has been signed.*

To ensure that ADA/ODA related needs of students and instructors are met during class:

Students are requested to refrain from wearing scented products (i.e. perfume/colognes or scented lotions) while attending class.

The front row is priority seating. Please move if asked by a member of the class.

The instructors may use measures such as leaving classroom doors open or running fans to prevent fragrance sensitivity reactions.

Course Evaluation

Student Perceptions of Teaching (SPOT)

SPOT is the student evaluation system for UNT and allows students the ability to confidentially provide constructive feedback to their instructor and department to improve the quality of student experiences in the course. The more students who respond the more representative the feedback. Therefore, to encourage feedback, should the class response for the SPOT exceed 50% of students, the class shall receive 0.3% extra credit on the *homework* component of the final grade. Should the class response exceed 75% of students, the class shall instead receive 0.6% extra credit on the *homework* component of the final grade.

Students will receive an email from “UNT SPOT Course Evaluations via IASystem Notification” (no-reply@iasystem.org) with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey they will receive a confirmation email that the survey has been submitted. For additional information, please visit the SPOT website (<http://spot.unt.edu/>) or email spot@unt.edu.

Mid-semester feedback survey

A survey soliciting feedback on the course will be released in the middle of the semester. Participation is purely voluntary and, like SPOT, responses seen by instructors will be anonymous. The purpose of the survey is to provide constructive feedback to the instructor mid-semester so that the instructional experience can be improved for the current cohort of students. *This survey shall have no impact on the final course grade.*

Academic Integrity Standards and Consequences

According to [UNT Policy 06-003](#)[Links to an external site.](#), Student Academic Integrity: academic

dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University. *Pursuant UNT policy 06-003, Students found guilty of academic dishonesty shall be subject to sanction which can include receiving a final mark of **F** for the course.*

Artificial Intelligence Systems

Students are not allowed to use artificial-intelligence systems (Anthropic's Claude, OpenAI ChatGPT, Deepseek V4-Flash, etc.) to complete, revise or contribute to any graded assignment for this class. Use of artificial intelligence systems will be treated a violation of [UNT policy 06.003](#) Student Academic Integrity.

ADA Accommodation Statement

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Access (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. *You may request reasonable accommodations at any time*; however, ODA notices of reasonable accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information, refer to the [Office of Disability Access](#)[Links to an external site.](#) website. You may also contact ODA by phone at (940) 565-4323.

Acceptable Student Behavior

Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn shall not be tolerated. Students engaging in unacceptable behavior will be directed to leave the classroom. The instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the [Code of Student Conduct](#)[Links to an external site.](#). The UNT's Code of Student Conduct can also be seen at the [Dean of Students website](#)[Links to an external site.](#).

Emergency Notification & Procedures

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Canvas for contingency plans for covering course materials.

Sexual Assault Prevention

UNT is committed to providing a safe learning environment free of all forms of sexual misconduct, including sexual harassment sexual assault, domestic violence, dating violence, and stalking. Federal laws (Title IX and the Violence Against Women Act) and UNT policies prohibit discrimination on the basis of sex, and therefore prohibit sexual misconduct. If you or someone you know is experiencing sexual harassment, relationship violence, stalking, and/or sexual assault, there are campus resources available to provide support and assistance. UNT's Survivor Advocates can assist a student who has been impacted by violence by filing protective orders, completing crime victim's compensation applications, contacting professors for absences related to an assault, working with housing to facilitate a room change where appropriate, and connecting students to other resources available both on and off campus. The [Survivor Advocates](#)[Links to an external site.](#) can be reached at SurvivorAdvocate@unt.edu or by calling the Dean of Students Office at 940-565-2648. Additionally, alleged sexual misconduct can be non-confidentially reported to the Title IX Coordinator at OEOTIX@unt.edu or at (940) 565 2759 or UNT Police (940) 565 3000.

Employees who, in the course and scope of their authorized duties, witness or receive information regarding the occurrence of an incident that the employee reasonably believes constitutes sexual misconduct and is alleged to have been committed by or against a person who was a student enrolled at or an employee of the institution at the time of the incident shall promptly report the incident to the Title IX Coordinator in the Office of Equal Opportunity or a deputy Title IX Coordinator. The report must include all information concerning the incident known to the reporting person that is relevant to the investigation and, if applicable, redress of the incident, including whether an alleged victim has expressed a desire for confidentiality in reporting the incident. For additional details please see [UNT policy 16.005](#)[Links to an external site.](#)

Class Recordings & Student Likenesses

Class recordings are the intellectual property of the university or instructor and are reserved for use only by students in this class and only for educational purposes. Students may not post or otherwise share the recordings outside the class, or outside the Canvas Learning Management System, in any form. Failing to follow this restriction is a violation of the UNT Code of Student Conduct and could lead to disciplinary action.

Syllabus Change Policy

The instructor(s) reserve the right to update or revise the syllabus content. You shall be informed of any and all changes via (i) announcement, (ii) class-wide email. The purpose of any revision shall be outlined. The revised syllabus shall supersede any previous versions and take immediate effect. Any and all ADA accommodations shall supersede revised syllabus policies where applicable.

Course Schedule Change Policy

Circumstances such as campus closure will require that the course schedule be updated or revised. Therefore, the instructor(s) reserve the right to update or revise the course schedule which may include

adjusting assignment due dates. You shall be informed of any and all changes via (i) announcement, (ii) class-wide email. The purpose for any revision shall be outlined. The revised course schedule shall supersede any previous versions and take immediate effect.

Zoom Policies

Appointments to see the instructors can be handled remotely. For these appointments, the Canvas Zoom module shall be used. In the event class is to be delivered in remote format, the Canvas Zoom module shall be used as well. Canvas shall be used for all submissions and course interactions. The following outlines Zoom policy for this course:

All students are asked to please make sure their Zoom ID includes their first and last names. Zoom IDs that use nicknames, aliases, device names, etc. shall be assumed to not be an enrolled student in the course and not allowed into the lecture meeting. Usage of any recorded remote lectures will be governed by the recording policy in this syllabus and all relevant UNT policy

For the inevitable technical issue, students should immediately notify UNT University Information Technology Student Help Desk (AITS-Admin-Helpdesk@unt.edu or 940.565.2324) as well as the instructor. The instructor and the UNT University Information Technology Student Help Desk Team will work with the student to resolve any issues at the earliest possible time.