Master Course Syllabus

Semester: Spring
Year: 2025
Course Prefix: ECE
Course and Section #: 2255-202
Course Title: Circuit Theory Lab
Credits: 1

Course Description

They are designed to accompany ECE 2250. In this course, a series of hands-on experiments will provide the students with a foundation in the design and simulation of circuits utilizing both the breadboard and software (Multisim). It covers analog circuit design, construction, simulation, and debugging using resistors, capacitors, inductors, and other introductory circuit components

Course Prerequisites: MATH 1050 or MATH 1055

Course Attributes

This course has the following attributes:

☐ General knowledge of electronic components
☐ Basic knowledge of using lab equipment
☐ Basic knowledge of using software (Multisim)

Instructor Information

Instructor Name: Alaa Abdullah, Ph.D., P.Eng.
Office: GT 619B
Phone: 8018638000 Ex. 4917
Email: alaa.abdullah@uvu.edu

***Office Hours*:** Monday: 10:00 AM - 11:00 AM, Tuesday: 9:30 AM - 11:30 AM and Wednesday: 10:00 AM - 12:00 PM. Also, by appointment through MICROSOFT TEAMS. If you like an appointment, please send me an email. I will book you for 15 minutes. Students can also communicate with me via email. The students should use their UVU email accounts to send emails.

Class Time and Location: Friday, 8:00 AM – 10:50 PM in room CS515

Student Learning Outcomes

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Course Materials and Texts

In this course, students will need the lab manual to perform the experiments. The lab manual will be uploaded to Canvas before the lab sessions.

Course Requirements

This course is conducted in a face-to-face format, with one session held each week. Students are required to perform experiments in two formats: hardware and software.
In the hardware format, students must implement the circuits using actual electronic components, a breadboard, and lab equipment to obtain the simulation results. In the software format, students are required to simulate the same circuits using Multisim software.
Upon completing their experiments, students must submit a lab report. The submission deadline for the lab report is one week after the experiment is performed. The lab report will account for 40% of the total course grade.

The grading scheme for the course is as follows:

Attendance	20%
Lab Reports	40%
Demonstrations	40%

General Description of the Subject Matter of Each Lecture or Discussion
Course Details (tentative):

Week	**Date:** Month/(Days)/Year	**Description**
1	01/(6-10)/2025	Lab 1: Syllabus and Introduction to Lab Equipment and Multisim
2	01(13-17)/2025	Lab 2: Ohms Law
3	01/(20-24)/2025	Lab 3: KVL and KCL
4	01/(27-31)/2025	Lab 4: Voltage and Current Divider Rule
5	02/(3-7)/2025	Lab 5: Nodal Analysis
6	02/(10-14)/2025	Lab 6: Mesh Analysis
7	02/(17-21)/2025	Lab 7: Source Transformation
8	02/(24-28)/2025	Lab 8: Superposition
9	03/(3-7)/2025	Lab 9: Thevenin and Norton Analysis Methods
10	03/(10-14)/2025	**Holiday – Spring Break**
11	03(17-21)/2025	Lab 10: Op-Amps
12	03/(24-28)/2025	Lab 11: RC-DC Circuits
13	(31/3-4/4)/2025	Lab 12: RLC_Series_DC Circuits
14	04/(7-11)/2025	Lab 13: Sinusoidal Steady State RC Circuits
15	04/(14-18)/2025	Lab 14: Sinusoidal Steady Series_RLC Circuits

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Attending Requirements:

Attending class on time is part of attendance. This class is a face-to-face course. Attendance at lab sessions is mandatory, and one mark will be deducted for each missed session. Using cell phones is not permitted during lab sessions. There are no exams in this course. For lab assignments with due dates (provided in Canvas), ten percent will be deducted from the assignment grade for each late day. Additionally, a late lab assignment must be submitted within four days of its due date, after which no credit will be given. For example: late by 12 hours (within 1 day) is a 10% deduction, late by 60 hours (between 2-3 days) is a 30% deduction, and late by any more than 96 hours (more than 4 days) is 100% deduction and 0 credit for the

assignment. You are responsible for being knowledgeable of all material from ECE 2700 in the text, class lectures, and supplemental reading assignments, as much of that material will allow you to better understand what is being assigned in the labs. Final grades will be assigned according to the following schedule (anything above XX.9% will be rounded up):

The following Standard Letter grades and numeric point values are used to compute the cumulative grade point average (GPA) based on UVU Policy 523 section 5.1.2:

93% & above	A	Exceptional performance and achievement	4.0
90 – 92.9%	A-	Excellent performance and achievement	3.7
87 – 89.9%	B+	Very good performance and achievement	3.4
83 – 86.9%	B	Good performance and achievement	3.0
80 – 82.9%	B-	Fair performance and achievement	2.7
77 – 79.9%	C+	More than adequate performance and achievement	2.4
73 – 76.9%	C	Adequate performance and achievement	2.0
70 – 72.9%	C-	Less than adequate performance and achievement	1.7
67 – 69.9%	D+	More than minimal performance and achievement	1.4
64 – 66.9%	D	Minimal performance and achievement	1.0
60 – 63.9%	D-	Less than minimal performance and achievement	0.7
0 – 59.9%	E	Unsatisfactory performance and achievement	0.0

UW Unofficial withdrawal from class

Using Remote Testing Software

☐ This course does not use remote testing software.

Required University Syllabus Statements

Accommodations/Students with Disabilities

Students needing accommodations due to a permanent or temporary disability, pregnancy or pregnancy-related conditions may contact UVU Accessibility Services at accessibilityservices@uvu.edu or 801-863-8747. Accessibility Services is located on the Orem Campus in BA 110.

Deaf/Hard of Hearing students requesting ASL interpreters or transcribers can contact Accessibility Services to set up accommodations. Deaf/Hard of Hearing services can be contacted at DHHservices@uvu.edu

DHH is located on the Orem Campus in BA 112.

Academic Integrity

At Utah Valley University, faculty and students operate in an atmosphere of mutual trust. Maintaining an atmosphere of academic integrity allows for free exchange of ideas and enables all members of the community to achieve their highest potential. Our goal is to foster an intellectual atmosphere that produces scholars of integrity and imaginative thought. In all academic work, the ideas and contributions of others must be appropriately acknowledged and UVU students are expected to produce their own original academic work.

Faculty and students share the responsibility of ensuring the honesty and fairness of the intellectual environment at UVU. Students have a responsibility to promote academic integrity at the university by not participating in or facilitating others' participation in any act of academic dishonesty. As members of the academic community, students must become familiar with their rights and responsibilities. In each course,

they are responsible for knowing the requirements and restrictions regarding research and writing, assessments, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Likewise, instructors are responsible to clearly state expectations and model best practices.

Further information on what constitutes academic dishonesty is detailed in UVU Policy 541: *Student Code of Conduct*.

Equity and Title IX

Utah Valley University does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, gender expression, age (40 and over), disability, veteran status, pregnancy, childbirth, or pregnancy-related conditions, citizenship, genetic information, or other basis protected by applicable law, including Title IX and 34 C.F.R. Part 106, in employment, treatment, admission, access to educational programs and activities, or other University benefits or services. Inquiries about nondiscrimination at UVU may be directed to the U.S. Department of Education's Office for Civil Rights or UVU's Title IX Coordinator at 801-863-7999 – TitleIX@uvu.edu – 800 W University Pkwy, Orem, 84058, Suite BA 203.

Religious Accommodation

UVU values and acknowledges the array of worldviews, faiths, and religions represented in our student body, and as such provides supportive accommodations for students. Religious belief or conscience broadly includes religious, non-religious, theistic, or non-theistic moral or ethical beliefs as well as participation in religious holidays, observances, or activities. Accommodations may include scheduling or due-date modifications or make-up assignments for missed class work.

To seek a religious accommodation, a student must provide written notice to the instructor and the Director of Accessibility Services at accessibilityservices@uvu.edu. If the accommodation relates to a scheduling conflict, the notice should include the date, time, and brief description of the difficulty posed by the conflict. Such requests should be made as soon as the student is aware of the prospective scheduling conflict.

While religious expression is welcome throughout campus, UVU also has a specially dedicated space for meditation, prayer, reflection, or other forms of religious expression.
