

COURSE OUTLINE

ECE 250 Linear Circuits I Term – FALL 2019 (201909)

Instructor

Dr. Nikitas Dimopoulos
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Office Hours

Days: MR
Time: 13:00 -14:00
Location: EOW 437

I can be reached via email (please use “ECE250 question” as your subject)

If you need to see me in person at a different time, please make an appointment (via email).

If you need to see me urgently, please come to my office. If there is light, I am in the office!

Course Objectives

To introduce the mathematical techniques and application skills needed to analyze, design, and make laboratory measurements on linear electric circuits.

Learning Outcomes

1	Use Ohm's law and Kirchoff laws to analyze resistive circuits
2	Use network theorems (including mesh currents and node voltages) to analyze resistive circuits
3	Solve 1st and 2nd order RC and RL circuits
4	Use phasors to perform AC analysis
5	Assess series and parallel resonance and calculate AC power
6	Solve 3-phase circuits with Y- and Delta- loads
7	Demonstrate communication skills through lab reports documenting experiential work carried out in a laboratory environment.
8	Demonstrate ability to work as member of a team documenting this through lab reports and interaction with the lab demonstrator

Syllabus

- Circuit analysis and design techniques. Resistors, sources, Kirchhoff's voltage and current laws. Theorems: linearity, superposition, Thevenin, Norton. Node and mesh analysis. Capacitors and inductors, series and parallel connections, stored energies. Analysis of first- and second-order circuits. Forced and natural responses. Phasors, impedance and admittance. Network theorems using phasors. Series and parallel resonance. RMS quantities, complex power. Maximum power transfer. Three-phase circuits, Y- and Delta-loads.
- Introduction to first and second order differential equations.

These topics are covered in Chapters 1,2,3,4,6,7,8,9,10 and 11 in your book.

Lectures

A-Section(s): A01 / CRN 10892

, B- & T- Sections Please see below for Lab and Tutorial sections

Days/Location: MR/ECS 123

Time: 11:30-12:50

Tutorial

T- Sections

Section/CRN	Place	Time	Instructor	Instructor's email
T01/ 10909	ECS125	T 15:30-16:20	Amirhossein Alizadehkhaledi	alizadeh.amirhossein1@gmail.com
T02/ 10910	ECS125	W 15:30-16:20	Mostafa Esmaili	emostafa@uvic.ca
T03/ 14066	ECS116	T 17:00-17:50	Shahram Moradi	sh.moradi59@gmail.com

Tutorials start on Tuesday, September 10, 2019.

Labs

Location: ELW B324

Section	Meets	Day	Time
B01/B03	Odd Weeks	R	13:30-16:20
B05/B07	Odd Weeks	R	16:30-19:20
B02/B04	Even Weeks	R	13:30-16:20
B06	Even Weeks	R	16:30-19:20
B10/B12	Even Weeks	F	11:30-14:20
B14	Even Weeks	F	14:30-17:20
B22	Even Weeks	T	12:30-15:20
B18/B20	Even Weeks	T	16:30-19:20

Odd weeks start with week 1 on September 23 to 27 and continue at two weeks intervals

Even weeks start with week 2 on September 30 to October 4 and continue at two weeks intervals

There are no labs the weeks of October 14 to 18 and November 11 to 15.

A more detailed schedule can be found in the course web site and in the course notes.

Lab Orientation Sessions

Mandatory for all students

B01/B03	Thursday, Sep 12	1:30 - 3:00 pm	ELW B324
B02/B04	Thursday, Sep 12	3:00 - 4:30 pm	ELW B324
B05/B07	Thursday, Sep 12	4:30 - 6:00 pm	ELW B324
B06	Thursday, Sep 12	6:00 - 7:30 pm	ELW B324
B10/B12	Friday, Sep 13	11:30 am – 1:00 pm	ELW B324
B14	Friday, Sep 13	2:30 - 4:00 pm	ELW B324
B18/B20	Tuesday, Sep 10	4:30 - 6:00 pm	ELW B324
B22	Tuesday, Sep 10	12:30 - 2:00 pm	ELW B324

Required Text

Title: Electric Circuits (plus Mastering Engineering)
Author: J.W. Nilsson, S.A. Riedel
Publisher: Pearson (11th Edition)
Year: 2018

Optional Text

Title: ELEC250 Linear Circuits I Laboratory Manual
Author: N. Dimopoulos, F. Gebali
Edition 4, May 2018

Calculators:

For the exams, you'll need a **non-programmable, non-graphing** calculator that supports **complex number** arithmetic.

References:

Course Web site: <https://www.ece.uvic.ca/~ece250/>

Login: **please use your netlink credentials to access the website.**

Assessment:

Assignments:	8%	Due Dates: TBA (on course's web site)
Labs	22%	
Mid-term	20%	Date: Thursday, October 17, 2019
Final Exam	47%	
Quizzes:	3%	(Quizzes will be done through MasteringEngineering)

Notes:

- Failure to complete all laboratory requirements will result in a grade of N being awarded for the course.
- To pass the course, the aggregate grade of the midterm and the final must be a passing grade, OR the grade of the final exam must be a passing grade.

The final grade obtained from the above marking scheme for the purpose of GPA calculation will be based on the percentage-to-grade point conversion table as listed in the current Undergraduate Calendar.

<https://web.uvic.ca/calendar2019-09/undergrad/info/regulations/grading.html>

There will be no supplemental examination for this course.

Note to students:

Students who have issues with the conduct of the course should discuss them with the instructor first. If these discussions do not resolve the issue, then students should feel free to contact the Chair of the Department by email or the Chair's Assistant to set up an appointment.

Course Withdrawal Deadlines:

- September 17: Withdrawal with 100% reduction of tuition fees
- October 8: Withdrawal with 50% reduction of tuition fees
- October 31: Last day for withdrawal (no fees returned)

Accommodation of Religious Observance:

<https://web.uvic.ca/calendar2019-09/undergrad/info/regulations/religious-observanc.html>

Policy on Inclusivity and Diversity:

<https://web.uvic.ca/calendar2019-09/general/policies.html>

Standards of Professional Behaviour:

You are advised to read the Faculty of Engineering document Standards for Professional Behaviour, which contains important information regarding conduct in courses, labs, and in the general use of facilities.

<https://www.uvic.ca/engineering/assets/docs/professional-behaviour.pdf>

Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult the entry in the current Undergraduate Calendar for the UVic policy on academic integrity.

<https://web.uvic.ca/calendar2019-09/undergrad/info/regulations/academic-integrity.html>

Equality:

This course aims to provide equal opportunities and access for all students to enjoy the benefits and privileges of the class and its curriculum, and to meet the syllabus requirements. Reasonable and appropriate accommodation will be made available to students with documented disabilities (physical, mental, learning) in order to give them the opportunity to successfully meet the essential requirements of the course. The accommodation will not alter academic standards or learning outcomes, although the student may be allowed to demonstrate knowledge and skills in a different way. It is not necessary for you to reveal your disability and/or confidential medical information to the course instructor. If you believe that you may require accommodation, the course instructor can provide you with information about confidential resources on campus that can assist you in arranging an appropriate accommodation. Alternatively, you may want to contact the Centre for Accessible Learning located in the Campus Services Building.

The University of Victoria is committed to promoting, providing, and protecting a positive, supportive, and safe learning and working environment for all its members.

Course Lecture Notes:

Unless otherwise noted, all course materials supplied to students in this course have been prepared by the instructor and are intended for use in this course only. These materials are NOT to be re-circulated digitally, whether by email or by uploading or copying to websites, or to others not enrolled in this course. Violation of this policy may in some cases constitute a breach of academic integrity as defined in the UVic Calendar.

Sexualized Violence Prevention and Response at Uvic:

UVic takes sexualized violence seriously, and has raised the bar for what is considered acceptable behaviour. We encourage students to learn more about how the university defines sexualized violence and its overall approach by visiting www.uvic.ca/svp. If you or someone you know has been impacted by sexualized violence and needs information, advice, and/or support please contact the sexualized violence resource office in Equity and Human Rights (EQHR). Whether or not you have been directly impacted, if you want to take part in the important prevention work taking place on campus, you can also reach out:

Where: Sexualized violence resource office in EQHR; Sedgewick C119

Phone: 250.721.8021

Email: svpcoordinator@uvic.ca

Web: www.uvic.ca/svp

Office of the Ombudsperson:

The [Office of the Ombudsperson](http://uvicombudsperson.ca/) is an independent and impartial resource to assist with the fair resolution of student issues. A confidential consultation can help you understand your rights and responsibilities. The Ombudsperson can also clarify information, help navigate procedures, assist with problem-solving, facilitate communication, provide feedback on an appeal, investigate and make recommendations. Phone: 250-721-8357; Email: ombuddy@uvic.ca; Web: <https://uvicombudsperson.ca/>