Faculty of Engineering

COURSE OUTLINE

ELEC 250 – Linear Circuits I

Term – Fall 2016 (201609)

Instructor
Dr. Nikitas Dimopoulos
Phone: 721-8902
E-mail: nikitas@ece.uvic.ca

Office Hours
Days: TWF
Time: 13:30-14:00
Location: EOW 437

I can be reached via email (please use “ELEC250 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.

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

Learning Outcomes

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<table>
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<tbody>
<tr>
<td>1</td>
<td>Use Ohm's law and Kirchhoff laws to analyze resistive circuits</td>
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<tr>
<td>2</td>
<td>Use network theorems (including mesh currents and node voltages) to analyze resistive circuits</td>
</tr>
<tr>
<td>3</td>
<td>Solve 1st and 2nd order RC and RL circuits</td>
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<td>4</td>
<td>Use phasors to perform AC analysis</td>
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<tr>
<td>5</td>
<td>Assess series and parallel resonance and calculate AC power</td>
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<tr>
<td>6</td>
<td>Solve 3-phase circuits with Y- and Delta- loads</td>
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<tr>
<td>7</td>
<td>Demonstrate communication skills through lab reports documenting experiential work carried out in a laboratory environment.</td>
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<tr>
<td>8</td>
<td>Demonstrate ability to work as member of a team documenting this through lab reports and interaction with the lab demonstrator</td>
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Syllabus
- 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, A02 / CRN 11217, 11218  B-Sections  Please see below for Lab sections
Days:  TWF
Time:  12:30-13:20
Location:  ELL 168

Tutorial
Tutorial Instructor:  Mr. Khamis Elnawaa  k.elnawaa@gmail.com

T-Section(s):  T01 / CRN 11225
Days:  M  Tutorials start the second week of classes (i.e. Monday September 12, 2016)
Time:  15:30-16:20
Location:  BWC A104

Labs
Location:  ELW B324

<table>
<thead>
<tr>
<th>Section</th>
<th>Even/Odd Weeks</th>
<th>Day(s)</th>
<th>Time</th>
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<tbody>
<tr>
<td>B01</td>
<td>Odd</td>
<td>T</td>
<td>14:00-17:00</td>
</tr>
<tr>
<td>B02</td>
<td>Even</td>
<td>T</td>
<td>14:00-17:00</td>
</tr>
<tr>
<td>B03</td>
<td>Odd</td>
<td>W</td>
<td>13:30-16:30</td>
</tr>
<tr>
<td>B04</td>
<td>Even</td>
<td>W</td>
<td>13:30-16:30</td>
</tr>
<tr>
<td>B05</td>
<td>Odd</td>
<td>T</td>
<td>17:00-20:00</td>
</tr>
<tr>
<td>B07</td>
<td>Odd</td>
<td>R</td>
<td>15:30-18:30</td>
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</tbody>
</table>

Odd weeks start with week 1 on September 26 to 30 and continue at two weeks intervals
Even weeks start with week 2 on October 3 to 7 and continue at two weeks intervals
There are no labs the weeks of October 10 to 14 and November 7 to 11.
A more detailed schedule can be found in the course web site and in the course notes.

ELEC 250 LAB Orientation Schedule

<table>
<thead>
<tr>
<th>Section</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>B01</td>
<td>Tuesday, Sep 13</td>
<td>2:00 - 3:30 pm</td>
<td>ELW B324</td>
</tr>
<tr>
<td>B02</td>
<td>Tuesday, Sep 13</td>
<td>3:30 - 5:00 pm</td>
<td>ELW B324</td>
</tr>
<tr>
<td>B03</td>
<td>Wednesday, Sep 14</td>
<td>1:30 - 3:00 pm</td>
<td>ELW B324</td>
</tr>
<tr>
<td>B04</td>
<td>Wednesday, Sep 14</td>
<td>3:00 - 4:30 pm</td>
<td>ELW B324</td>
</tr>
<tr>
<td>B05</td>
<td>Tuesday, Sep 13</td>
<td>5:30 - 7:00 pm</td>
<td>ELW B324</td>
</tr>
<tr>
<td>B07</td>
<td>Thursday, Sep 15</td>
<td>3:30 - 5:00 pm</td>
<td>ELW B324</td>
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</table>

Required Text
Title:  Electric Circuits (plus Mastering Engineering)
Author:  J.W. Nilsson, S.A. Riedel
Publisher:  Pearson (10th Edition)
Year:  2015

Optional Text
Title:  ELEC250 Linear Circuits I Laboratory Manual
Author:  N. Dimopoulos, F. Gebali
Year:  2016
References:
Course Web site: www.ece.uvic.ca/~elec250
login: elec250
password: will be distributed in class

Assessment:
Assignments: 10% Due Dates: TBA (on course’s web site)
Labs 20%
Mid-term 20% Date: Friday, October 21st, 2015
Final Exam 46%
Quizzes: 4% (Quizzes will be done through MasteringEngineering)
Pop quizzes 2% (Pop quizzes will take place during the tutorial for bonus marks)

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.

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 Secretary to set up an appointment.

Accommodation of Religious Observance
http://web.uvic.ca/calendar2016-09/general/policies.html

Policy on Inclusivity and Diversity
http://web.uvic.ca/calendar2016-09/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.
http://web.uvic.ca/calendar2016-09/undergrad/info/regulations/academic-integrity.html

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.