### ELEC 250 – Linear Circuits I

**Term - FALL 2014** (201409)

**Instructor**

Dr.      Nikitas Dimopoulos
Phone: 721-8902
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**Office Hours**

Days:   WF
Time:    W (15:00-15:50) F (13:30-14:20)
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. In an emergency, you may try me at the office.

**Lectures**

**A**-Section(s):      A01, A02 / CRN 11178,  11179
Days:              TWF
Time:              11:30-12:20
Location:          ECS 125

**Tutorial**

**T**-Section(s):      T01 / CRN 11186
Days: W            Tutorials start the second week of classes (i.e. Wednesday September 10, 2014)
Time:              13:30-14:20
Location:          CLE A127

**Labs            Location: ELW B324**

**There is a scheduled orientation session scheduled for the third week of classes.**
**This orientation session is mandatory**

| | | | |
|---|---|---|---|
| B01 | Tuesday, Sep 16 | 2:30 - 4:00 pm | ELW B324 |
| B02 | Tuesday, Sep 16 | 4:00 - 5:30 pm | ELW B324 |
| B03 | Wednesday, Sep 17 | 4:00 - 5:30 pm | ELW B324 |
| B04 | Wednesday, Sep 17 | 5:30 - 7:00 pm | ELW B324 |
| B05 * | Monday, Sep 15 | 12:45 - 2:15 pm | ELW B324 |
| B06 * | Monday, Sep 15 | 4:00 - 5:30 pm | ELW B324 |

*Please note that lab sections B05/B06 are normally scheduled on Tuesday 5:30 pm

**Labs start on the fourth week of classes (i.e. the week of September 22, 2014) and they are held on alternate weeks. All labs are held in EOW B324**

| ODD WEEKS | | | EVEN WEEKS | | |
|---|---|---|---|---|---|
| B01 | T | 14:30-17:30 | B02 | T | 14:30-17:30 |
| B05 | T | 17:30-20:30 | B06 | T | 17:30-20:30 |
| B03 | W | 16:00-19:00 | B04 | W | 16:00-19:00 |

**There are no labs the weeks of October 13th and November 10th**

| **Required Text** | **Optional Text** |
|---|---|
| Title:    Electric Circuits  (plus Mastering Engineering) | Title: |
| Author: J.W. Nilsson, S.A. Riedel | Author: |
| Publisher: Pearson (10$^{th}$ Edition) | Publisher: |
| Year:    2015 | Year: |

**References:**

**Course Web site:**  www.ece.uvic.ca/~elec250
login:  elec250
password:  will be distributed in class

**Assessment:**

| | | |
|---|---|---|
| Assignments: | 10% | |
| Labs | 15% | |
| Quizzes (tutorials/online) | 10% | |
| Mid-term | 20% | Date: Friday, October 17, 2014 |
| Final | 45% | |

**Note:**    Failure to complete all laboratory requirements will result in a grade of N being awarded for the course.

**Due Dates for Assignments:**
Homework will normally be assigned at the end of concept entities. The due dates will normally be one week after the assignment. There will be approximately 10 assignments.

**The final grade obtained from the above marking scheme will be based on the following percentage-to-grade point conversion:**

| Passing Grades | Grade Point Value | Percentage for Instructor Use Only | |
|---|---|---|---|
| A+ | 9 | 90 – 100 | |
| A | 8 | 85 – 89 | |
| A- | 7 | 80 – 84 | |
| B+ | 6 | 77 – 79 | |
| B | 5 | 73 – 76 | |
| B- | 4 | 70 – 72 | |
| C+ | 3 | 65 – 69 | |
| C | 2 | 60 – 64 | |
| D | 1 | 50 – 59 | |
| **Failing Grades** | **Grade Point Value** | **Percentage for Instructor Use Only** | **Description** |
| E | 0 | 0 - 49 | Fail, *Conditional supplemental exam. (For undergraduate courses only) |
| F | 0 | 0 – 49 | Fail, no supplemental. |
| N | 0 | 0 – 49 | Did not write examination, Lab or otherwise complete course requirements by the end of term or session; no supplemental exam. |

*Assignment of E grade will be at the discretion of the Course Instructor.*

The rules for supplemental examinations are found on page 80 of the current 2014/15 Undergraduate Calendar.

| Term in which E Grade Was Obtained | Application Deadline for Supplemental Exam | Supplemental Exam Date |
|---|---|---|
| First term of Winter Session (Sept – Dec) | February 28 in the following term | First week of following May |
| Second term of Winter Session (Jan – Apr) | June 30 in the following term | First week of following September |
| Summer Session (May – Aug) | October 31 in the following term | First week of following January |

Deferred exams will normally be written at the start of the student's next academic term; i.e., approximately 4 months following the deferral of the exam.

**Course Description**

1. Course Objectives

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

2. Learning Outcomes

| |
|---|
| Use Ohm's law and Kirchhoff laws to analyze resistive circuits |
| Use network theorems (including mesh currents and node voltages) to analyze resistive circuits |
| Solve 1st and 2nd order RC and RL circuits |
| Use phasors to perform AC analysis |
| Assess series and parallel resonance and calculate AC power |

3. Syllabus

Circuit analysis and design techniques. Resistors, sources, Kirchhoff's voltage and current laws. Theorems: linearity, superposition, Thevenin, Norton. Node and loop 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.

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

**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 ECE Chair by email or the ECE Chair's Secretary eceasst@uvic.ca to set up an appointment.*

**Accommodation of Religious Observance**
See http://web.uvic.ca/calendar2014/GI/GUPo.html

**Policy on Inclusivity and Diversity**
See http://web.uvic.ca/calendar2014/GI/GUPo.html

**Standards of Professional Behaviour**

You are advised to read the Faculty of Engineering document Standards for Professional Behaviour at http://www.uvic.ca/engineering/current/undergrad/index.php#section0-25 which contains important information regarding conduct in courses, labs, and in the general use of facilities.

Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult

http://web.uvic.ca/calendar2014/FACS/UnIn/UARe/PoAcI.html for the UVic policy on academic integrity.