



ELEC 380 – Electronic Circuits II

Term – Fall 2017 (201709)

Instructor

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Office Hours

Days: Tuesday
Time: 12:30pm – 3:30pm
Location: EOW-313

Course Objectives

- Make students understand what the design challenge is
- Show students where to look for information and how to read it
- Present analog design techniques and how to use them efficiently
- Expose students to Lab equipment and analog measurements
- Present a literature digest for the analog design domain

Learning Outcomes

- Generate the small-signal circuit of multiple-stage transistor-based amplifiers
- Analyze differential amplifiers with active biasing and loads
- Evaluate the frequency response of transistor-based amplifiers
- Identify the topology of transistor-based amplifiers with negative feedback
- Apply the feedback theory to transistor-based amplifiers
- Evaluate the response of transistor-based amplifiers with negative feedback
- Assess the beneficial effects of negative feedback in transistor-based amplifiers
- Solve circuits taking into consideration the components' finite tolerances and temperature sensitivity
- Solve circuits with operational amplifiers
- Carry out circuits' implementation and evaluation in the Lab including troubleshooting
- Use software tools to simulate circuits

Syllabus

- Material review (bipolar & field-effect transistors, single-stage amplifiers)
- Large signal amplifiers; Distortion
- Frequency response of transistor amplifiers
- Current sources
- Differential amplifiers
- Negative feedback
- Ideal and non-ideal operational amplifier
- Oscillators and timers
- Electrical characteristics of bipolar and MOS logic families
- Operational amplifiers and applications

A-Section(s): A01 / CRN 11281
Days: Monday, Thursday
Time: 8:30am – 9:50am
Location: COR-B108

Tutorials

A-Section(s): A01 / CRN 11281
Days: TBA
Time: TBA
Location: TBA

Tutor:

TBA (tba@uvic.ca)

Laboratories (location: ELW-B324)

B01 – CRN 11282	Monday, 12:00pm – 2:50pm	Reza KHAKPOUR (rezakh@uvic.ca)
B02 – CRN 11283	Monday, 3:00pm – 5:50pm	Farnoosh TALAEI (ftalaei@uvic.ca)
B03 – CRN 11284	Wednesday, 2:00pm – 4:50pm	Mohamed MATOUG (mmatoug@uvic.ca)
B04 – CRN 11285	Thursday, 12:00pm – 2:50pm	Mahsa MAHTAB (m.mahtab.83@gmail.com)
B05 – CRN 11286	Friday, 2:00pm – 4:20pm	Alizera SEYFOLLAHI (aliseyf@uvic.ca)

Lab TAs:

Optional Textbooks

Title: Analysis and Design of Analog Integrated Circuits
Authors: P. Gray, P. Hurst, S. Lewis, R. Meyer
Publisher: Wiley
Edition: 4th or 5th

Title: Microelectronic Circuits
Author: A. Sedra and K. Smith
Publisher: Oxford University Press
Year: 7th

References: Course material for ELEC250 and ELEC330

Assessment:

Assignments:	10%	Due Dates: TBD
Quiz:	5%	Date: Monday, Sept. 25, 2017
Labs:	20%	
Mid-term:	20%	Date: Monday, Oct. 30, 2017
Final Exam:	45%	

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

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.

Assignment of E grade and supplemental examination for this course will be at the discretion of the Course Instructor. The rules for supplemental examinations can be found in the current Undergraduate Calendar.

<http://web.uvic.ca/calendar2017-09/undergrad/info/regulations/grading.html>

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/calendar2017-09/undergrad/info/regulations/religious-observanc.html>

Policy on Inclusivity and Diversity: <http://web.uvic.ca/calendar2017-09/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/calendar2017-09/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 for appropriate accommodation. Alternatively, you may want to contact the Resource Centre for Students with a Disability located in the Campus Services Building.

The University of Victoria is committed to promoting, providing, and protecting a positive, and 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.