

COURSE OUTLINE

ECE 380 - Electronic Circuits II

Term - FALL 2019 (201909)

Instructor

Dr. Mihai SIMA
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E-mail: msima@ece.uvic.ca

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 in the real world
- Expose students to Lab equipment and analog measurements
- Present a literature digest for the analog design domain

Learning Outcomes

- Generate the small-signal circuits of multiple-stage transistor-based amplifiers
- Analyze differential amplifiers with active biasing and loads
- Evaluate the frequency response of transistor-based amplifiers
- Apply the feedback theory to transistor-based amplifiers and assess its beneficial effects
- Evaluate the response of transistor-based amplifiers with negative feedback
- Evaluate the effects induced by the components' finite tolerances and temperature sensitivity
- Solve circuits with operational amplifiers
- Implement, evaluate, and troubleshoot electronic circuits in a Lab setup
- Use software tools to simulate electronic 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
- Operational amplifiers and applications
- Oscillators and timers

Lectures

A-Section(s): A01 / CRN 10988
Days: Monday and Thursday
Time: 8:30am – 9:50am
Location: CLE-A127

Instructor

Mihai SIMA
(msima@ece.uvic.ca)

Tutorials

A-Section(s): A01 / CRN 10988
Days: TBA
Time: TBA
Location: TBA

Tutor

Ashley LUFT
(aluft@uvic.ca)

Laboratories (location: ELW-B324)

B01 – CRN 10989	Monday, 1:00pm – 3:50pm
B02 – CRN 10990	Monday, 1:00pm – 3:50pm
B03 – CRN 10991	Monday, 4:00pm – 6:50pm
B04 – CRN 10992	Monday, 4:00pm – 6:50pm
B05 – CRN 10993	Wednesday, 1:30pm – 4:20pm
B06 – CRN 10994	Wednesday, 1:30pm – 4:20pm
B07 – CRN 10995	Wednesday, 4:30pm – 7:20pm
B08 – CRN 10996	Wednesday, 4:30pm – 7:20pm

Lab TAs:

TBA
TBA
TBA
TBA
TBA
TBA
TBA
TBA

Required Text

Title: ECE380 Course Notes and Lab Manual
Author: Mihai SIMA
Edition: 2019

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
Edition: 7th

References: Course material for ECE/ELEC 250 and ECE/ELEC 330

Assessment:

Assignments:	10%	Due Dates: TBD
Quiz	5%	Date: Monday, Sept. 23, 2019
Laboratory	20%	
Mid-term	20%	Date: Monday, Oct. 28, 2019
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.

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

Assignment of an 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.

<https://web.uvic.ca/calendar2019-09/undergrad/info/regulations/exams.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 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](https://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/>