ELEC 330 -- Electronic Circuits: I

Term -- Spring 2019 (201901)

Instructor: Dr. Harry Kwok
Office Hours: Days: Wednesday
Phone: 250-7218685 Time: 12:30-13:30
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Course Objectives
- This course deals with the principle of operation and design issues related to modern electronic circuits. The advancement of electronic circuits has been primarily due to the invention of new devices and design techniques and it is desirable for practicing engineers to have an updated perspective and understanding on state-of-the-art electronic circuits and future trends.

Learning Outcomes
- Describe non-linear two-terminal (diodes) and three-terminal (BJTs, FETs) elements (LO-1)
- Name the characteristics of diodes, BJTs, and FETs, their limitations and applications (SLO-1.1)
- Analyze biasing circuits for diodes, BJTs, and FETs (LO-2)
- Design biasing circuits for diodes, BJTs, and FETs (SLO-2.1)
- Identify the configuration of single-stage transistor-based amplifiers (SLO-2.2)
- Solve circuits with diodes and single-stage transistor-based amplifiers (LO-3)
- Carry out circuits' implementation and evaluation in the Lab including troubleshooting (SLO-3.1; SLO-3.2)
- Use software tools to simulate circuits (LO-4; SLO-4.1; LO-5; SLO-5.1)
- Demonstrate the ability to work in a group through experiential work carried out in the lab (in lab manual)
- Demonstrate communication skills through lab reports documenting team-based experiential work carried out in the lab (in lab manual)

Syllabus
- Nonlinear devices; modeling and application of diodes; rectifiers, voltage regulators; waveform shaping circuits (chapters 2 and 3)
- Biasing of bipolar and field-effect transistors (Chapters 5 and 8)
- Small-signal amplifiers and multistage amplifiers (Chapters 6 and 9)
- Nonlinear applications of transistors including: digital circuits such as inverters, (logic) gates and flip-flops (Chapters 4 and 9)
- Circuit design; simulations; implementation; and testing (Lab manual)

A-Section(s): A01 / CRN 20856
Days: TWF
Time: 11:30-12:20
Location: ELL167

B01
TA (email)
(to be posted on webpage)

Required Text
Title: Electronic Devices conventional current version, 9th/10th Ed.
Author: T.L. Floyd
Publisher: Prentice Hall
Year: 2012/2018

Optional Text
Course Pack for ELEC330
Author: Adam Zielinski
Available at University Bookstore

Assessment:
Assignments: 10%  Due Dates: To be announced
Labs 15%
Mid-term 40%  Date: Feb. 8 (Fri) and Mar. 1 (Fri)
Final Exam 35%

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/calendar2019-01/undergrad/info/regulations/grading.html

There will be no supplemental examination for this course.
https://web.uvic.ca/calendar2019-01/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.

Accommodation of Religious Observance:

Policy on Inclusivity and Diversity:
https://web.uvic.ca/calendar2019-01/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/calendar2019-01/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.

**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:** sypcoordinator@uvic.ca
- **Web:** www.uvic.ca/svp