ECE 365 – Applied Electronics and Electrical Machines
Term-FALL 2019 (201909)

Instructor Information

Instructor (Applied Electronics)
Dr. F. Gebali, P.Eng., Ph.D.
Phone: 250-721-6509
Email: fayez at uvic.ca

Instructor (Electrical Machines)
Dr. T. Ilamparithi, EIT, Ph.D.
Phone: 250-721-8679
Email: ilampari at uvic.ca

Office Hours

Day: Tuesday
Time: Drop in or phone first
Location: EOW 433

Day: Thursday
Time: 2:30 to 4:30 PM
Location: EOW 407

Course Website
http://www.ece.uvic.ca/~fayez/courses/365/

Course Objectives

Electrical and electronics components have been an integral part of modern society for a while now. Contemporary researchers’ focus on smart sensors, smart homes, smart grids, internet of things, artificial intelligence, augmented reality/virtual reality, power walls, electric transportation systems, 3-D printing, etc. indicates that a further growth in electrical and electronics components is inevitable. Consequently, it is important for a modern engineer, be it mechanical, civil, biomedical, or software engineer, to be familiar with the some of the key elements of electrical and electronics systems. ECE 365 provides an ideal opportunity for you, as an upcoming engineer, to get introduced to the foundational elements of electrical machines and electronics circuits. The primary objectives of the course are to teach the principles and analysis of electronic and electromechanical systems. You will learn the analysis techniques for predicting electric circuit performance and learn the principles and operation of electric machines.

Learning Outcomes

By enrolling in ECE 365 and actively involving yourself in the learning process, you shall be able to

1. Analyze diode circuits.
2. Analyze bipolar junction transistor (BJT) circuits.
3. Analyze metal-oxide semiconductor field-effect transistor (MOSFET) circuits.
4. Analyze & design operational amplifier (Op Amp) circuits.
5. Analyze one-phase transformers.
6. Analyze DC machines.
7. Analyze induction motors and synchronous motors.

Syllabus

Applied Electronics
Chapter 9 Diodes
Chapter 12 Bipolar Junction Transistors
Chapter 11 Field-Effect Transistors (Except Sec. 11.7: CMOS logic gates)
Chapter 13 Operational Amplifiers

Electrical Machines
Chapter 14 Magnetic Circuits and Transformers
Chapter 15 DC Machines
Chapter 16 AC Machines (Except Sec. 16.4 Single-phase motors and Sec. 16.5: Stepper & brushless dc motors)
Lectures
Section: A01  CRN 10963
Days:     Tue, Wed, Fri
Time:     3:30 – 4:20 PM
Location: Elliott Building (ELL) 168

Laboratory
http://www.ece.uvic.ca/~fayez/courses/365/labs/labs.html

Tutorial
Section: T01  CRN 10976
Day:      Mon
Time:     4:00 – 4:50 PM
Location: Elliott Building (ELL) 167

Required Text
Note: Earlier editions are acceptable. However, homework will be assigned from 7th Edition only.

Assessment

<table>
<thead>
<tr>
<th>Activity</th>
<th>Grade</th>
</tr>
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<tbody>
<tr>
<td>Four Labs* (2.5% each)</td>
<td>10%</td>
</tr>
<tr>
<td>Four exms (20% each)</td>
<td>80%</td>
</tr>
<tr>
<td>Four quizzes (2.5% each)</td>
<td>10%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
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</tbody>
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Note: Failure to complete all lab 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

There will be no supplemental examination for this course.
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:

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 for 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, 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 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](http://www.uvic.ca/svp)

Office of the Ombudsperson:
The Office of the Ombudsperson 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/](https://uvicombudsperson.ca/)