



ECE 299 – Introduction to Electrical and Computer Engineering Design

Term – Summer 2018 (201805)

Instructor

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Office Hours

Days: Thursdays
Time: 10:30 AM to 12:30 PM
Location: EOW 407

Course Objectives

- Introduce the objectives of engineering design.
- Explain the steps involved in engineering design.
- Inculcate the habit of prioritizing.
- Familiarize ways to mitigate challenges commonly encountered in a team.
- Incorporate protection mechanisms as a part of the design.
- Justify the need for preparing test procedures.
- Emphasize on technical documentation.

Intended Learning Outcomes

By the end of the course, you should be able to

- Read the datasheet of an electronic component and identify the pertinent information.
- Build a circuit using LM386 operational amplifier to amplify audio signal
- Program an STM407 microcontroller to drive LEDs and to receive inputs from push buttons.
- Design a layout for a printed circuit board (PCB) using KiCAD software.
- Using SolidWorks software package, design a mechanical enclosure for the product being developed.
- Formulate test procedures to validate the functions of the designed prototype.
- Prepare professional reports detailing the design activity.

Syllabus

- Introduction to basic electronics, circuits and testing
- Embedded programming and debugging
- Technical drawings
- Basics of project planning

A-Section: A01 / CRN 30265

Days: Tuesdays (T), Wednesdays (W)

Time: (T) 1:30 to 3:20 PM; (W) 3:30 to 4:20 PM

Location: (T) ECS 116, (W) DSB C103

Sec	Day	Time	Lab
B01	M	1:00 to 2:50 PM	ELW A359
B02	T	4:30 to 6:20 PM	ELW A359
B03	W	1:00 to 2:50 PM	ELW A359
B04	Th	1:00 to 2:50 PM	ELW A359

Required Text

N/A

Assessment:

Assignments	5 x 4	= 20%
Labs	4 x 10	= 40%
Project – PCB testing	1 x 10	= 10%
Project – Demonstration	1 x 10	= 10%
Project – Report	1 x 20	= 20%

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/calendar2018-05/undergrad/info/regulations/grading.html>

There will be no supplemental examination for this course.

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:

<https://web.uvic.ca/calendar2018-05/undergrad/info/regulations/religious-observanc.html>

Policy on Inclusivity and Diversity:

<https://web.uvic.ca/calendar2018-05/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/calendar2018-05/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 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.