Faculty of Engineering

COURSE OUTLINE

CENG/ELEC 299: Introduction to Electrical and Computer Engineering Design

Term – SUMMER 2015 (201505)

Instructor

Dr. Michael McGuire
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Office Hours

Days: Thursday
Time: 2-3 PM
Location: EOW 431

Course Objectives & Learning Outcomes

Students exiting CENG/ELEC299 will be able to:

- Follow a standard structured process to design a system comprised of computer, electrical, mechanical, and software subsystems.
- Apply discipline-specific technical knowledge in the design process and understand the relevance of that knowledge to the disciplines in professional practice.
- Demonstrate teamwork skills in the successful accomplishment of an engineering design project.
- Design basic circuits using resistors, diodes, transistors, and operational amplifiers.
- Build an electronic circuit on a breadboard.
- Diagnose a malfunctioning circuit to apply corrective action.
- Create the layout for the PCB of a basic low frequency circuit.
- Write software for a simple real time system.

Syllabus

CENG/ELEC 299 is a 1.5 unit course which provides instruction and activities on the Computer Aided Design (CAD) tools used in electrical and computer engineering design. These tools will be used for drafting (mechanical and electrical circuit schematics), and printed-circuit board layout as well for scientific and system simulation. Students will also be exposed to the instrumentation devices used in control and measurement. By working through case studies, students will learn different phases of the electrical and computer engineering design process. They will also learn time and project management. Students will need to present and write a report their designs and describe problems encountered during the execution of the project.

Lectures

CENG299/ELEC299
A01 CRN 30094/30305
Day: Mondays
Time: 16:30-17:20
Location: ECS 116
Day: Wednesdays
Time: 13:30-15:20
Location: ECS 125

Labs **Location: ELW A359/ELW B220**

Section	Day:	Time(s):	TA(email)
B01	M	9:00-10:50	(closed)
B02	T	13:00-14:50	A. Jooshesh (jooshesh@uvic.ca)
B03	M	13:30-15:20	B. Keshavarz Hedayati (babak@ece.uvic.ca)
B04	R	9:00-10:50	L. Nyantahe (lsn@uvic.ca)
B05	R	14:00-13:50	L. Pan (leyuanpan@gmail.com)

Optional Text

Title: Practical Electronics for Inventors
Author: P. Scherz and S. Monk
Publisher: McGraw-Hill Education (3rd Edition)
Year: 2013

Assessment:

Labs	30 %
Project:	60 %
Final Quiz:	10 %

Project Grade Breakdown:

Project Planning and Teamwork	20%
Circuit Design	20%
PCB Layout	10%
Physical Design	10%
Software Development	10%
Integration and Testing	15%
Final Report and Presentation	15%

Notes:

- Failure to complete all laboratory and project requirements will result in a grade of N being awarded for the course.
- Students are expected to attend all lectures and laboratory sessions. Failure to attend laboratory sessions and lectures 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.

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 Secretary to set up an appointment.

Accommodation of Religious Observance

http://web.uvic.ca/calendar/GI/GUPo.html

Policy on Inclusivity and Diversity

http://web.uvic.ca/calendar/GI/GUPo.html

Standards of Professional Behaviour

You are advised to read the Faculty of Engineering document Standards for Professional Behaviour in current Undergraduate Calendar, which contains important information regarding conduct in courses, labs, and in the general use of facilities.

Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult entry in current Undergraduate Calendar for the UVic policy on academic integrity.

http://www.uvic.ca/engineering/assets/docs/professional-behaviour.pdf

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.