

COURSE OUTLINE

ECE 399 – Design Project 1

Term –FALL 2020 (202009)

Instructor

Dr. Alexandra Branzan Albu
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Office Hours

Days: on demand
Time: on demand
Location/Platform/link: Zoom

Course Objectives

- The ECE 399 Design Project I course provides an opportunity for students to study engineering design on real world projects, in teams of 4 to 5 persons. Projects are proposed by industrial/academic sponsors, and cover a variety of electrical and computer engineering design topics. The list of projects will be made available on the course site (Brightspace). Each team will select a project from the list, articulate the engineering requirements, perform a technical literature review of related technologies, and a feasibility study of possible design solutions. Student-proposed projects need to be submitted for the course instructor's approval; they also need to specify an academic or industrial sponsor.
- Students are expected to learn the project design process, including setting up milestones, background preparation, application of previously acquired knowledge to the project development, exploration of alternative approaches and their evaluation. All project deliverables will be shared with the academic or industrial sponsor.
- Students will gain theoretical and contextual knowledge relevant to the design process from lectures. A number of lectures will involve guest speakers, who will present a diversity of viewpoints on engineering design. Three lectures will be dedicated to case studies related to intellectual property, ethics, and project management. Class participation will be enabled through specialized discussion forums.

Learning Outcomes

- Understand and apply the main principles of the engineering design process
- Formulate a problem definition, design goals, and design objectives for a design activity;
- Generate and evaluate conceptual design ideas;
- Apply mathematical methods for the analysis of an engineering design;
- Participate effectively in teamwork during the entire engineering design process;
- Master the basics of technical project management;
- Develop and refine oral and written communication skills;
- Understand the ethical and social implications of engineering work;

Syllabus

- The design process and design methodologies
- Requirements analysis
- System Design: the synthesis/analysis cycle
- Fundamental principles of project management
- Principles of ethical design
- Intellectual property

A-Section(s): A01 / CRN 11021

B01, B02, B03, B04, B05 TA: TBD

Days: Tuesdays

Time: 16:00 – 16:50

Location/Platform/link: ZOOM, link to be provided in BrightSpace

Required Textbook: none

Optional Textbook: none

Online Course Delivery:

As this course will be conducted online during this term, students will need to complete assignments/labs online. The students will require access to a computer which has the following software installed: MATLAB_R2020a

References: White papers on engineering design, readings for case studies, and lecture slides will be posted on the course site hosted by BrightSpace.

Assessment: (all dates are tentative and subject to change)

Case study reflection (individual)	8%	Date: December 4 2020
Participation to case studies and discussion forums (individual)	12%	Date: continuous and incremental
Technical Literature Review – oral presentation (team)	20%	Date: October 18 2020
Requirements specification document (team)	10%	Date: November 1 2020
Feasibility study – oral presentation (team)	20%	Date: November 22 2020
Electronic log book (individual)	5%	Date: continuous and incremental
Peer and self-assessment (individual)	5%	Date: continuous and incremental
Final report	20%	Date: December 6 2020

Important: All deadlines and schedules for this course will reference Pacific Daylight Time until November 1, 2020, and then Pacific Standard Time.

Note:

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://www.uvic.ca/calendar/archives/202009/undergrad/index.php#/policy/S1AAgoGuV?bc=true&bcCurrent=14%20-%20Grading&bcGroup=Undergraduate%20Academic%20Regulations&bcItem=policies>

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.

Course Withdrawal Deadlines:

- September 22, 2020: Withdrawal with 100% reduction of tuition fees
- October 13, 2020: Withdrawal with 50% reduction of tuition fees
- October 31, 2020: Last day for withdrawal (no fees returned)

Accommodation of Religious Observance:

<https://www.uvic.ca/calendar/archives/202009/undergrad/index.php#/policy/r1q0gofdN?bc=true&bcCurrent=10%20-%20Accommodation%20of%20Religious%20Observance&bcGroup=Undergraduate%20Academic%20Regulations&bcItem=policies>

Policy on Inclusivity and Diversity:

Engineering: <https://www.uvic.ca/engineering/about/equity/index.php>

Academic Calendar:

<https://www.uvic.ca/calendar/archives/202009/undergrad/index.php#/policy/HkQ0pzdAN?bc=true&bcCurrent=%20General%20University%20Policies&bcGroup=General%20University%20Policies&bcItem=policies>

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>

Academic Integrity

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://www.uvic.ca/calendar/archives/202009/undergrad/index.php#/policy/Sk_0xsM_V?bc=true&bcCurrent=08%20-%20Policy%20on%20Academic%20Integrity&bcGroup=Undergraduate%20Academic%20Regulations&bclItem=policies

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. <https://www.uvic.ca/services/cal/>. 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](http://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, Website: [https://uvicombudsperson.ca/](http://uvicombudsperson.ca/)