

ENGR 121 Design II

Term – Spring 2020 (202001)

Instructor

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Office Hours

By appointment.
Please email to schedule an appointment.

Course Objectives

- The goal of the course is to familiarize you with the process of working on an engineering design team. The design portion of the course will help you learn basic technical knowledge and teamwork skills. The design methodology covered in the ENGR110 and ENGR112 courses will continue to be developed. The communications portion of the course will cover some basic technical communication skills.

Learning Outcomes

Students completing ENGR 121 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;
- Identify business, social, environmental and regulatory considerations relevant to the execution of an engineering design project;
- Apply selected tools for effective management of time and resources in the context of an engineering design project.

Syllabus

ENGR 121 is a 1.0 unit course, in which instruction and activities in engineering design are presented. You will be introduced to fundamental principles and practical aspects of biomedical, civil, computer, electrical, mechanical, and software engineering and will apply this knowledge in developing and implementing your own designs.

Plenary Lectures

Plenary lectures provide technical information you will need to undertake Design Laboratory work, as well as discussion of topics on other aspects of the engineering profession. Attendance is mandatory since materials in the plenary lectures will form the basis for lab quizzes and questions.

Engineering Design Laboratory (ENGR 121)

You will work in teams of 3-4 to complete a number of design exercises and one major design project. The design laboratory will be start during the week of January 13th. During the lab of that week, students will be assigned to a group. You will be working with this group for the full term.

Parts of the design exercises and the entire design project will be completed using the VEX robotic kits (<http://www.vexrobotics.com/vex>).

Software:

Can be downloaded for free from VEX robotics website (<http://www.robotc.net/download/vexrobotics/>). You may need to create an account on the VEX website (<https://www.vexrobotics.com/customer/account/login/>).

Cost:

Parts cost & deposit for VEX kits: \$80/student (\$30 for parts +\$50 refundable deposit).

Please bring cash to the lab in the week of 13th January.

Assignments

Detailed descriptions of assignments will be posted on a CourseSpaces and discussed in Plenary Lectures, and Design Laboratories. All assignments must be completed to the satisfaction of your instructors in order to pass the course.

Course Web Site:

CourseSpaces page for design laboratory and project: <http://coursespaces.uvic.ca/my>

There will be a separate website for each communications section.

ENGR 121 Plenary lectures :

A-Section(s): A01 / CRN 21324
Day: Tuesday
Time: 02:30 PM - 03:20 PM
Location: Bob Wright Centre (BWC) B150

A-Section(s): A02 / CRN 21325
Day: Tuesday
Time: 03:30 PM - 04:20 PM
Location: Engineering & Computer Science (ECS) 123

ENGR 121 Design Labs : ELW B336

B01	Monday	14:30-16:20
B02	Monday	16:30-18:20
B03	Tuesday	08:30-10:20
B04	Tuesday	11:30-13:20
B05	Tuesday	16:30-18:20
B06	Wednesday	12:30-14:20
B07	Wednesday	14:30-16:20
B08	Wednesday	16:30-18:20
B09	Thursday	14:30-16:20
B10	Thursday	16:30-18:20
B11	Friday	10:30-12:20
B12	Friday	12:30-14:20
B13	Friday	14:30-16:20
B14	Tuesday	18:30-20:20

Lab Safety Regulations:

Students are expected to comply with all lab safety instructions and rules. This includes following all instructions of Lab Instructors and Technicians. Food and drink are not permitted in the lab. **Non-compliance with these rules will result in grading penalties. The first infraction of lab safety rules will result in a warning. The second infraction will result in expulsion from that lab session with a zero grade being assigned to any lab activity due in that session in addition to a 5% penalty on the course grade. A third infraction of lab safety rules will result in the student being assigned a failing grade for the design portion of the course.**

ENGR 121 Assessment:

Engineering Design Grade Breakdown

Design Assignments/Labs*	36%	* All labs and assignments will be weighted equally.
Plenary lecture attendance	10%	
Design Final Project:	54%	
Total	100%	

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/calendar2020-01/undergrad/info/regulations/grading.html>

There will be no supplemental examination for this course.

Course Withdrawal Deadlines:

- January 19: Withdrawal with 100% reduction of tuition fees
- February 9: Withdrawal with 50% reduction of tuition fees
- February 29: Last day for withdrawal (no fees returned)

Course policies and guidelines

Late Assignments: *No late assignments will be accepted unless prior arrangements have been made with the instructor at least 48 hours before the assignment due date.*

Coursework Mark Appeals: *All marks must be appealed within 7 days of the mark being posted.*

Attendance: We expect students attend all lectures and labs. It is entirely the students' responsibility to recover any information or announcements presented in lectures from which they were absent.

Electronic devices in labs and lectures: No unauthorized *audio* or *video* recording of lectures is permitted.

Electronic devices in midterms and exams: Calculators are only permitted for examinations and tests if explicitly authorized and the type of calculator permitted may be restricted. No other electronic devices (e.g. cell phones, pagers, PDA, etc.) may be used during examinations or tests *unless explicitly authorized*.

Plagiarism: Submitted work may be checked using plagiarism detection software. Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult the link given below for the UVic policy on academic integrity. Note that the university policy includes the statement that "*A largely or fully plagiarized assignment should result in a grade of F for the course.*"

Academic Integrity: You must make yourself aware of the University of Victoria guidelines and policy concerning fraud and academic integrity at this link, <https://www.uvic.ca/current-students/home/academics/academic-integrity/index.php>

Policy on Academic Integrity: <https://web.uvic.ca/calendar2020-01/undergrad/info/regulations/academic-integrity.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. Please find the document at this link:

<http://www.uvic.ca/shared/shared%5fengineering/docs/professional-behaviour.pdf>

Note to students of ENGR 121:

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.

University of Victoria Privacy Policy: If any student has concerns about their private information being stored or accessed outside of Canada, they are required to inform the course instructor about their concerns before the end of second week of classes.

Accommodation of Religious Observance:

See entry in the current Undergraduate Calendar

<https://web.uvic.ca/calendar2020-01/undergrad/info/regulations/religious-observanc.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 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.

Policy on Inclusivity and Diversity:

See entry in the current Undergraduate Calendar

<https://web.uvic.ca/calendar2020-01/general/policies.html>

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

Office of the Ombudsperson:

The [Office of the Ombudsperson](http://www.uvic.ca/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/>