

School of Engineering and Computer Science

Te Kura Mātai Pūkaha, Pūrorohiko



Prescription

This course addresses the engineering design process through a collection of engineering projects that require a range of technologies and design techniques. Sustainability will be an important component of the course, with some of the projects addressing technology and design for sustainable engineering.

Course learning objectives

Students who pass this course will be able to:

1. Explain and follow engineering processes involving specification, design, modelling, analysis and construction to solve engineering problems.
2. Construct simulations of formal models and explain the role of analysis and evaluation in the engineering design process.
3. Prepare a report presenting the outcomes of using a particular model to evaluate a design.
4. Work in a team, applying an understanding of how different skills in a team complement each other.

Course content

ENGR 110 is a project-based course with four separate modules. The topics are as follows:

Module 1 Sustainable Energy Systems

Module 2 Solar Energy Sun Tracking

Module 3 Artificial Intelligence

Module 4 Finite State Machine

Withdrawal from Course

Withdrawal dates and process:

<https://www.victoria.ac.nz/students/study/course-additions-withdrawals>

Lecturers

Howard Lukefahr (Coordinator)

howard.lukefahr@vuw.ac.nz 04 4635233 ext 7288

334 Cotton, Kelburn

Arthur Roberts

arthur.roberts@vuw.ac.nz 04 4636750

145 Cotton, Kelburn

Daniel Burmester

daniel.burmester@vuw.ac.nz 04 4639998

404 Alan MacDiarmid Building, Kelburn **Lab Coordinator**

Arthur Roberts - Co145c

Teaching Format

This is a project-based course featuring four separate modules each with its own topic. Each module lasts three weeks. In the first week of each module there will be three lectures and sometimes a tutorial in one of the lab periods. In the second and third weeks of each module there will be one lecture per week (on Thursdays) and two labs of two hours duration each week. See the lecture schedule for details.

Student feedback

Student feedback on University courses may be found at:
http://www.cad.vuw.ac.nz/feedback/feedback_display.php

Dates (trimester, teaching & break dates)

- Teaching: 08 July 2019 - 13 October 2019
- Break: 19 August 2019 - 01 September 2019
- Study period: 14 October 2019 - 17 October 2019
- Exam period: 18 October 2019 - 09 November 2019

Class Times and Room Numbers

08 July 2019 - 18 August 2019

- **Monday** 15:10 - 16:00 – LT101, Maclaurin, Kelburn
- **Tuesday** 15:10 - 16:00 – LT205, Hugh Mackenzie, Kelburn
- **Thursday** 15:10 - 16:00 – LT101, Maclaurin, Kelburn

02 September 2019 - 13 October 2019

- **Monday** 15:10 - 16:00 – LT101, Maclaurin, Kelburn
- **Tuesday** 15:10 - 16:00 – LT205, Hugh Mackenzie, Kelburn
- **Thursday** 15:10 - 16:00 – LT101, Maclaurin, Kelburn

Other Classes

There will be two weekly labs of two hours duration each (four hours per week) in CO145.

Set Texts and Recommended Readings

Required

There are no required texts for this offering.

Mandatory Course Requirements

There are no mandatory course requirements for this course.

If you believe that exceptional circumstances may prevent you from meeting the mandatory course requirements, contact the Course Coordinator for advice as soon as possible.

Assessment

This course consists of four separate modules each with its own topic. Each of the first three modules will be assessed through a lab script, a project report, and a test, The fourth module will be assessed through a lab script and a project report. In addition there is a final tutorial.

Assessment Item	Due Date or Test Date	CLO(s)	Percentage
Module 1 (Sustainability) Lab Script		CLO: 1,2,3,4	5%
Module 1 Project Report		CLO: 1,2,3	10%
Module 1 Terms test	31 July	CLO: 1,2	10%
Module 2 (Solar Tracking) Lab Script		CLO: 1,2,3,4	5%
Module 2 Project Report		CLO: 1,2,3	10%
Module 2 Terms Test	4 Sept	CLO: 1,2	10%
Module 3 (AI) Lab Script		CLO: 1,2,3,4	5%
Module 3 Project Report		CLO: 1,2,3	10%
Module 3 Terms Test	25 Sept	CLO: 1,2	10%
Module 4 (FSM) Lab Script		CLO: 1,2,3,4	5%
Module 4 Project Report		CLO: 1,2,3	10%
Module 4 Terms Test	9 Oct	CLO: 1,2,3,4	5%
Final Tutorial (participation)		CLO: 3,4	5%

Penalties

Work submitted late will be subject to a penalty of 10% of the total mark per day.

Extensions

Individual extensions will only be granted in exceptional personal circumstances, and should be negotiated with the course coordinator before the deadline whenever possible. Documentation (eg, medical certificate) may be required.

Submission & Return

Lab script and project report due dates will be posted on the lecture schedule. All lab scripts and project

reports will be marked. Your marks and comments on your submission will be accessible via the web: see the links on the Assignments page

Marking Criteria

Student work provided for assessment in this course may be checked for academic integrity by the electronic search engine <http://www.turnitin.com>. Turnitin is an online plagiarism prevention tool which compares submitted work with a very large database of existing material. Turnitin will retain a copy of submitted material on behalf of the University for detection of future plagiarism, but access to the full text of submissions is not made available to any other party.

Group Work

Laboratory and project work will often require working as part of a group, however assignments are all assessed individually.

Workload

In order to maintain satisfactory progress in ENGR 110, you should plan to spend an average of 10 hours per week on this paper. A plausible and approximate breakdown for these hours would be:

- Lectures: 2
- Labs: 4
- Readings and Lab preparation: 1
- Additional work on the assignments: 3

Teaching Plan

See https://ecs.victoria.ac.nz/Courses/ENGR110_2019T2/LectureSchedule

Communication of Additional Information

All communication about the course will be provided through the course website: https://ecs.victoria.ac.nz/Courses/ENGR110_2019T2/

Links to General Course Information

- Academic Integrity and Plagiarism: <https://www.victoria.ac.nz/students/study/exams/integrity-plagiarism>
- Academic Progress: <https://www.victoria.ac.nz/students/study/progress/academic-progress> (including restrictions and non-engagement)
- Dates and deadlines: <https://www.victoria.ac.nz/students/study/dates>
- Grades: <https://www.victoria.ac.nz/students/study/progress/grades>
- Special passes: Refer to the Assessment Handbook, at <https://www.victoria.ac.nz/documents/policy/staff-policy/assessment-handbook.pdf>
- Statutes and policies, e.g. Student Conduct Statute: <https://www.victoria.ac.nz/about/governance/strategy>
- Student support: <https://www.victoria.ac.nz/students/support>
- Students with disabilities: https://www.victoria.ac.nz/st_services/disability/
- Student Charter: <https://www.victoria.ac.nz/learning-teaching/learning-partnerships/student-charter>
- Terms and Conditions: <https://www.victoria.ac.nz/study/apply-enrol/terms-conditions/student-contract>
- Turnitin: <http://www.cad.vuw.ac.nz/wiki/index.php/Turnitin>

-
- University structure: <https://www.victoria.ac.nz/about/governance/structure>
 - VUWSA: <http://www.vuwsa.org.nz>

Offering CRN: [26051](#)

Points: 15

Prerequisites: COMP 102, ENGR 101

Restrictions: ENGR 111

Duration: 08 July 2019 - 10 November 2019

Starts: Trimester 2

Campus: Kelburn