

# 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 Artificial Intelligence
- Module 2 Finite State Machines
- Module 3 Sustainability
- Module 4 Solar Tracking

## Withdrawal from Course

Withdrawal dates and process:

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

## Lecturers

---

**Howard Lukefahr (Coordinator)**

howard.lukefahr@vuw.ac.nz

---

**Arthur Roberts**

arthur.roberts@vuw.ac.nz 04 4636750

145 Cotton, Kelburn **Lab Coordinator**

## Teaching Format

This course will be offered in-person and online. For students in Wellington, there will be a combination of in-person components and web/internet based resources. It will also be possible to take the course entirely online for those who cannot attend on campus, with all the components provided in-person also made available online.

This is a project-based course featuring four separate modules each with its own topic. The details are provided on the Lecture Schedule.

## Student feedback

Student feedback on University courses may be found at:  
[http://www.cad.vuw.ac.nz/feedback/feedback\\_display.php](http://www.cad.vuw.ac.nz/feedback/feedback_display.php)

## Dates (trimester, teaching & break dates)

- Teaching: 13 July 2020 - 18 October 2020
- Break: 17 August 2020 - 30 August 2020
- Exam period: 19 October 2020 - 25 October 2020

## Class Times and Room Numbers

### 13 July 2020 - 16 August 2020

- **Monday** 14:10 - 15:00 – LT205, Hugh Mackenzie, Kelburn
- **Wednesday** 14:10 - 15:00 – LT205, Hugh Mackenzie, Kelburn
- **Friday** 14:10 - 15:00 – MT228, Student Union, Kelburn

### 31 August 2020 - 18 October 2020

- **Monday** 14:10 - 15:00 – LT205, Hugh Mackenzie, Kelburn
- **Wednesday** 14:10 - 15:00 – LT205, Hugh Mackenzie, Kelburn
- **Friday** 14:10 - 15:00 – MT228, Student Union, 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. Three of the modules will be assessed through a lab script, project software, and a test, and one of these also requires a reflection. One module will be assessed through a lab script and a test. In addition there is a final tutorial.

Assessment Item	Due Date or Test Date	CLO(s)	Percentage
Module 1 (AI) Lab Script		CLO: 1,2,3,4	6%
Module 1 (AI) Project Software		CLO: 1,2,3	10%
Module 1 (AI) Terms Test on Blackboard	TBA	CLO: 1,2	10%
Module 2 (FSM) Lab Script		CLO: 1,2,3,4	6%
Module 2 (FSM) Software		CLO: 1,2,3	10%
Module 2 (FSM) Terms Test on Blackboard	TBA	CLO: 1,2	10%
Module 3 (Sustainability) Lab Script		CLO: 1,2,3,4	6%
Module 3 (Sustainability) Terms Test on Blackboard	TBA	CLO: 1,2	10%
Module 4 (Solar Tracker) Lab Script		CLO: 1,2,3,4	6%
Module 4 (Solar Tracker) Software and Reflection		CLO: 1,2,3	12%
Module 4 (Solar Tracker) Terms Test on Blackboard	TBA	CLO: 1,2,3,4	10%
Final Tutorial (participation)		CLO: 3,4	4%

## 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 dates will be posted on the lecture schedule. All lab scripts and projects 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 about 150 hours in total or about 12 hours per week on this paper. A plausible and approximate breakdown for these hours would be:

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

## Teaching Plan

See [https://ecs.wgtn.ac.nz/Courses/ENGR110\\_2020T2/LectureSchedule](https://ecs.wgtn.ac.nz/Courses/ENGR110_2020T2/LectureSchedule)

## Communication of Additional Information

All communication about the course will be provided through the course website: [https://ecs.wgtn.ac.nz/Courses/ENGR110\\_2020T2/](https://ecs.wgtn.ac.nz/Courses/ENGR110_2020T2/)

## Links to General Course Information

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

- 
- University structure: <https://www.wgtn.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:** 13 July 2020 - 25 October 2020

**Starts:** Trimester 2

**Campus:** Kelburn