

# School of Engineering and Computer Science

Te Kura Mātai Pūkaha, Pūrorohiko



## Prescription

This course will equip students with a basic understanding of mechanical theory and the skills of electronic and mechanical design and construction so that they can successfully design and complete a moderately complex project. A presentation of this project work forms an integral part of the course.

## Course learning objectives

Students who pass this course should be able to:

1. Configure a microcontroller to interface with a variety of sensors and actuators to implement data acquisition and control (BE Graduate Attribute 3(a), 3(b)).
2. Demonstrate the understanding of a range of mechanical principles in relation to engineering design (BE Graduate Attribute 3(a), 3(c)).
3. Use a variety of rapid prototyping techniques and tools to produce an electromechanical prototype (BE Graduate Attribute 3(c), 3(f)).
4. Apply an engineering design process to achieve a project outcome (BE Graduate Attribute 3(d), 3(f)).

## Course content

This course has critical lab components and is limited to enrolment in-person only. The course cannot be taken online, and in-person attendance at the labs is required.

## Withdrawal from Course

Withdrawal dates and process:

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

## Lecturers

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### Dr Christopher Hollitt (Coordinator)

christopher.hollitt@vuw.ac.nz 04 463 6965

AM 223 Alan Macdiarmid Building, Gate 7, Kelburn Parade, Kelburn

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### Hamish Colenso

hamish.colenso@vuw.ac.nz 04 463 6523

## Teaching Format

The course will be taught through a combination of lectures and laboratory sessions.

## Student feedback

EEEN201 is a new course in 2021, so no previous feedback is available.

## Dates (trimester, teaching & break dates)

- Teaching: 11 July 2022 - 14 October 2022
- Break: 22 August 2022 - 04 September 2022
- Study period: 17 October 2022 - 20 October 2022
- Exam period: 21 October 2022 - 12 November 2022

## Class Times and Room Numbers

### 11 July 2022 - 21 August 2022

- **Monday** 09:00 - 10:50 – LT102, Murphy, Kelburn
- **Friday** 09:00 - 09:50 – LT102, Murphy, Kelburn

### 05 September 2022 - 16 October 2022

- **Monday** 09:00 - 10:50 – LT102, Murphy, Kelburn
- **Friday** 09:00 - 09:50 – LT102, Murphy, Kelburn

## Other Classes

Attendance at a weekly three hour lab will be required. This time will be used to work on the course project.

## Set Texts and Recommended Readings

### Required

There are no required texts for this offering.

## Mandatory Course Requirements

In addition to achieving an overall pass mark of at least 50%, students must:

- Participate in the two design reviews.

*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 is 100% internally assessed.

Assessment Item	Due Date or Test Date	CLO(s)	Percentage
Two in-term tests (1 hour each)	Week 8, Assessment period	CLO: 2	20%
Two Assignments	Weeks 3, 7	CLO: 2,4	20%
Laboratory Exercises	Week 2	CLO: 3,4	10%
Preliminary Design Review	Weeks 6	CLO: 1,2,3,4	20%
Critical Design Review	Week 10	CLO: 1,2,3,4	20%
Final Project Demonstration and Report	Week 12	CLO: 1,2,3,4	10%

## Penalties

There will be a 10% penalty per working day or part thereof for assessment items submitted late. Work will not be accepted after the distribution of any solutions.

## Extensions

Extensions will only be given after prior discussion. Extensions will not be possible for work to be submitted for manufacturing or for the two design reviews.

## Submission & Return

Submission will be via the ECS submission system. Work will be returned via the same mechanism.

## Marking Criteria

The course includes the design and prototyping of a real world artefact. The marking of this portion of the course is not focussed on how well the artefact works, but rather on how well the design addresses the identified problem, and how well the prototyping work supports the design effort.

## Group Work

The project will be conducted in teams of approximately three students. Assessment associated with the project will partly involve marks for the team's design, but the emphasis of the marking will be on individual contributions. Details of this assessment will be provided for each of the major design review components of the course.

## Peer Assessment

Students will be expected to provide design critique on other students work as part of the Critical Design Review (CDR) process. The quality of the feedback will be assessed, but the students assessment of other teams' work will not be used for marking purposes.

# Workload

The student workload for this course is 150 hours.

# Teaching Plan

There will be weekly lectures in two parts. One will cover materials and devices, while the other part will look at design principles.

A weekly laboratory will introduce basic software tools in the first four weeks, after which the laboratory times will be used on the trimester long student project.

# Communication of Additional Information

Additional information will be provided via the ECS wiki:

[https://ecs.wgtn.ac.nz/Courses/EEEN201\\_2022T2/](https://ecs.wgtn.ac.nz/Courses/EEEN201_2022T2/)

# 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:** [33053](#)

**Points:** 15

**Prerequisites:** COMP 102 or 112; ENGR 101, 110; ENGR 121 or MATH 141 or equivalent;

**Restrictions:** ECEN 201

**Duration:** 11 July 2022 - 13 November 2022

**Starts:** Trimester 2

**Campus:** Kelburn