Prescription

This course provides a general introduction to the fundamental technical concepts needed to understand the design and engineering of electronic, mechatronic, networked and software systems. Experience is gained in basic engineering practice, with assembly and testing of basic hardware, software and networked systems, and construction of a personal computer.

Course learning objectives

Students who pass this course will be able to:

1. Understand the fundamental principles underlying Engineering, especially electronic, mechatronic, networked and software systems (BE graduate attributes 3(a)).

2. Work within a team, including breaking up and allocating tasks, managing a team, and working with other people to achieve a defined task (BE graduate attributes 2(a), 2(b) and 3(d)).

3. Communicate through explaining what they have done in coursework and reasons for it with their peers and others (BE graduate attribute 2(b)).

4. Understand the role of engineers and their responsibility to society (BE graduate attribute 1(a)).

5. Be creative and able to apply critical thinking through the design, implementation and testing of systems to solve real-world problems (BE graduate 3(b)).

Course content

The course is intended to give students experience in basic engineering practice, through gaining understanding of basic software and hardware systems and applying this knowledge to complete projects which include all aspects of these technologies.

The course is primarily offered in-person, but there will also be a remote option and there will be online alternatives for all the components of the course for students who cannot attend in-person.

Students taking this course remotely must have access to a computer with camera and microphone and a reliable high speed internet connection that will support real-time video plus audio connections and screen sharing. Students must be able to use Zoom; other communication applications may also be used. A mobile phone connection only is not considered sufficient. The comuputer must be adequate to support the programming required by the course: almost any modern windows, macintosh, or unix laptop or desktop computer will be sufficient, but an Android or IOS tablet will not.

If the assessment of the course includes tests, the tests will generally be run in-person on the Kelburn campus. There will be a remote option for students who cannot attend in-person, but the remote option imposes extra costs on the School and will be limited to students with a strong justification (for example, being enrolled from overseas). The remote test option will use the ProctorU system for online supervision of the tests. ProctorU requires installation of monitoring software on your computer which also uses your camera and microphone, and monitors your test-taking in real-time. Students who will need to use the remote test option must contact the course coordinator in the first two weeks to get permission and make arrangements.

==

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

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.

ENGR 101 is a project-based course and the weekly schedule will vary. See the Course Schedule for details.

Student feedback

Feedback from previous students who have taken ENGR 101 is available here:
http://www.cad.vuw.ac.nz/feedback/feedback_display.php

Dates (trimester, teaching & break dates)

- Teaching: 22 February 2021 - 28 May 2021
- Break: 05 April 2021 - 18 April 2021
- Study period: 31 May 2021 - 03 June 2021
- Exam period: 04 June 2021 - 19 June 2021

Class Times and Room Numbers

22 February 2021 - 04 April 2021
- **Monday** 15:10 - 16:00 – LT101, Maclaurin, Kelburn
- **Wednesday** 15:10 - 16:00 – LT101, Maclaurin, Kelburn
- **Friday** 15:10 - 16:00 – LT101, Maclaurin, Kelburn

19 April 2021 - 30 May 2021
- **Monday** 15:10 - 16:00 – LT101, Maclaurin, Kelburn
- **Wednesday** 15:10 - 16:00 – LT101, Maclaurin, Kelburn
- **Friday** 15:10 - 16:00 – LT101, Maclaurin, Kelburn

Other Classes

During lecture weeks we will have three lectures and one lab session (B) per week which will be used for a tutorial. During project weeks we will have two labs (A and B) per week and one lecture (Friday). Note students working on projects will sometimes need to coordinate their schedules with other students.

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.

- You must achieve a **D** grade or better in the Autonomous Vehicle Challenge.

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 will be assessed through tutorial exercises, two short projects, an in-term test and the Automated Vehicle Challenge project (AVC). The AVC project is assessed through several different items. The final assessment will consist of the submission of an individual report combined with a test.

Assessment Item	Due Date or Test Date	CLO(s)	Percentage
Terms Test	Week 8	CLO: 1,4,5	20%
On-line quizes	Across the term	CLO: 1,3,4,5	4%
Tutorials	Across the term	CLO: 1,3,4,5	10%
Short Project 1	Week 5	CLO: 1,2,3,5	13%
Short Project 2: Code and Testing	Week 7	CLO: 1,2,3,5	8%
Short Project 2: Reflection	Week 8	CLO: 1,2,3,5	5%
AVC project: plan (group mark)	Week 9	CLO: 1,2,3,5	2.5%
AVC project: Progress Report (group mark)	Week 10	CLO: 1,2,3,5	2.5%
AVC project: Robot demonstration (group mark)	Week 12	CLO: 1,2,3,5	10%
AVC project: final assessment (individual mark) (individual reflection and test)	Assessment Period	CLO: 1,2,3,5	25%

Penalties

Work submitted late will be subject to a penalty of 10% per day for 4 days.
No work will be accepted after this unless previously arranged with the course organiser.

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

All work is submitted through the ECS submission system, accessible through the course web pages. Marks and comments will be returned through the ECS marking system, also available through the course web pages.

Group Work

The AVC project involves group work. Some of the assessment items for the AVC (plan, progress report and demo) are a group mark. The final assessment item is an individual mark.

Workload

In order to maintain satisfactory progress in ENGR 101, you should plan to spend 10 hours per week on this paper.
A plausible and approximate breakdown for these hours would be:

Lectures: 1-3 hours per week

Laboratories and tutorials: 2 - 4 hours per week

Writing lab reports/assignments: 3 hours

Reading, review, preparation: 2 hours

Teaching Plan

Full details and schedule available at
https://ecs.wgtn.ac.nz/Courses/ENGR101_2021T1/LectureSchedule

Communication of Additional Information

All communication about the course will be provided through the course website:
https://ecs.wgtn.ac.nz/Courses/ENGR101_2021T1/

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-progess (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/
- 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: 15243

Points: 15
Prerequisites: enrolment in BE(Hons)
Duration: 22 February 2021 - 20 June 2021
Starts: Trimester 1
Campus: Kelburn