

# Engineering Technology - Course Outline

## ENGR 101: 2016 Trimester 1

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This document sets out the workload and assessment requirements for ENGR 101. It also provides contact information for staff involved in the course. If the contents of this document are altered during the course, you will be advised of the change by an announcement in lectures and/or on the course web site. A printed copy of this document is held in the School Office.

The ENGR 101 course provides a general introduction to the fundamental technical concepts needed to understand the design and engineering of electronic, mechatronic, networked and software systems. It is intended to give students experience in basic engineering practice, through gaining understanding of basic software, hardware and network systems and applying this knowledge to complete a project which includes all aspects of these technologies.

### Objectives

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By the end of the course, students should have:

1. Gained an understanding of fundamental principles underlying Engineering, especially electronic, mechatronic, networked and software systems (BE graduate attributes [3\(a\)](#)).
2. Gained experience in working 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. Practiced communication through explaining what they have done in coursework and reasons for it with their peers and others (BE graduate attribute [2\(b\)](#)).
4. Developed an understanding of the role of engineers and their responsibility to society (BE graduate attribute [1\(a\)](#)).
5. Demonstrated creative and critical thinking through the design, implementation and testing of systems to solve real-world problems (BE graduate [3\(b\)](#)).

### Course Organisation Details

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ENGR 101 starts on Monday 29th February 2016. The last week of lectures ends on 3rd June 2016. The examination period at the end of the course is 13th - 29th June 2016.

### Lectures, Laboratories, and Practical work

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A [schedule](#) of lecture topics, readings, and assignment due dates is available online.

There is a weekly [timetable](#) on the course website showing the times of the lectures, labs, and tutorial.

Lectures for ENGR 101 are at 12:00-12:50

- Monday (Maclaurin LT101),
- Wednesday (Maclaurin LT101)
- Friday (Maclaurin LT101)

A [schedule](#) of lecture topics, labs, and assignment due dates is available online. Copies of the lecture slides will be available via the schedule page.

The lectures are intended to give you an introduction to the engineering concepts that will give you a good grounding across the various engineering and computer science specialities offered here at Victoria (and on which your later course will build). They will also give you skills that you will need to survive and thrive first year, and an overview of what it means to be an engineer in the real world.

### Tutorials

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Small group tutorials will be run each week starting from Week 2. Participation in these tutorials is worth 10% of the final grade for the course, with participation in 8 out of the total 10 being sufficient for the full percentage for this part of the course. These tutorial will review content from all first year engineering courses and work through practice questions for tests and exams. Students will be assigned a tutorial session and attendance is highly recommended. Due to room size limits, moving between tutorial sessions is not allowed unless approved by the Senior Tutor for tutorials: [Howard Lukefahr](#).

Large group tutorials may occasionally be held during normal lecture times.

We will also run evening study groups each week, which will be a mix of revision, time to work on assignments and a more fun activity such as e-sports, software building and/or robot building with some food provided. These will run in AM

103 from 6-8pm on Mondays and 6-8pm on Wednesdays.

Every student in ENGR 101 is required to attend a 2-hour laboratory once every week including the introduction in week one.

You must sign in to a particular laboratory session during week one and you must attend that session throughout the course. Lab sign in can be done via the [electronic sign in system](#) on a first come first serve basis. Please sign up before 4th March so that groups can be confirmed in Cotton 145 and any conflicts resolved. Note the laboratory slots are often first-come, first served so please register early. [See the web site for details](#). In your first session you will be assigned to a table group, and you must remain in that table group throughout the course.

Laboratories in the first part of the trimester include a series of computer-based exercises. If you have access to a computer outside the labs, you may use it to work on laboratories, but you will need to acquire your own software. Please note that we do not have the resources to provide assistance if you have difficulties with a computer at home -- the tutors can only answer questions about the laboratories and the workstations in the laboratories. Note also that we cannot offer you any help with choosing, setting up, or fixing your own computer system, other than the general advice that we provide on the website.

Laboratories in the second part of the trimester consist of a Mechatronics design exercise to build an autonomous vehicle over a 6-week group project. Details will be announced in the week following the Easter Break.

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## Withdrawal

The last date for withdrawal from ENGR 101 with entitlement to a refund of tuition fees is 11 March 2016. The last date for withdrawal without being regarded as having failed the course is 13 May 2016 -- though later withdrawals may be approved by the Dean in special circumstances.

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## 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: 3 hours
- Laboratories: 2 hours
- Tutorials: 1 hour
- Writing lab reports/assignments: 2 hours
- Reading, review, preparation: 2 hours

Note this is a weekly average. Studying for tests is very important and necessary during the mid-trimester break and study week, with at least 30 hours in total recommended.

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## School of Engineering and Computer Science

The School office is located on level three of the Cotton Building ([Cotton 358](#)).

The notice board for ENGR 101 is located on the second floor of the Cotton Building.

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## Staff

The course organiser for ENGR 101 is [Elf Eldridge](#). The lecturers for the course are [Elf Eldridge](#) and [Bryan Ng](#). Their contact details are:

- [Elf Eldridge](#)
- [Alan MacDiarmid 228](#)
- [elf.eldridge@ecs.vuw.ac.nz](mailto:elf.eldridge@ecs.vuw.ac.nz)

- [Bryan Ng](#)
- [Alan MacDiarmid 404](#)
- +64 4 463 9998
- [Bryan.Ng@ecs.vuw.ac.nz](mailto:Bryan.Ng@ecs.vuw.ac.nz)

The Senior Tutor (academic) is

- [Howard Lukefahr](#)
  - [Cotton 252](#)
  - +64 4 463 5233 x 7288
  - [howard.lukefahr@ecs.vuw.ac.nz](mailto:howard.lukefahr@ecs.vuw.ac.nz)

The Senior Tutor (admin) is

- [Zarinah Amin](#)
  - [Cotton 343](#)

- +64 4 463 5936
- [zarinah.amin@ecs.vuw.ac.nz](mailto:zarinah.amin@ecs.vuw.ac.nz)

Arthur Roberts is in charge of preparing to the assignments and running of the laboratories. For any problems with laboratories or if you are unable to attend your assigned laboratory due to illness or other extraordinary circumstances please contact Arthur Roberts. His contact details are:

- Cotton 145
- +64 4 463 6750
- [Arthur.Roberts@ecs.vuw.ac.nz](mailto:Arthur.Roberts@ecs.vuw.ac.nz)

## Announcements and Communication

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The main means of communication outside of lectures will be the ENGR 101 web area at [http://ecs.victoria.ac.nz/Courses/ENGR101\\_2016T1/](http://ecs.victoria.ac.nz/Courses/ENGR101_2016T1/). There you will find, among other things, this document, the lecture schedule and assignment handouts, and the ENGR 101 Forum. The forum is a web-based bulletin board system. Questions and comments can be posted to the forum, and staff will read these posts and frequently respond to them. You should make a bookmark to the course home page because you will need to access it frequently.

## Assessment

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Assessments will assess students' mastery of the technical material in the course (Objective 1). The assignments will require some written answers to aid the development of good written communication skills (Objective 3). The first portion of the laboratories will focus on practical computing skills (Objective 5). This will be assessed primarily through brief written laboratory reports. The second half of the laboratories will focus on the development of teamwork and oral communication skills (Objectives 2 and 3). Assessment of this portion of the laboratory will also depend on the technical prowess of the resulting engineering designs (Objective 5). Finally, the tests will assess students' mastery of both the course's technical content (Objective 1) and of engineering professionalism and ethics (Objective 4).

Your grade for ENGR 101 will be determined based on the following assessment weightings:

Item	Weight
Assignments 1-5	25% (5% each)
Autonomous Vehicle Challenge (Group)	25%
Terms Test 1 (Friday 15th April 2016)	20%
Terms Test 2 (Monday 30th May 2016)	20%
Tutorial Participation	10%

## Assignments and Projects

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There will be five written assignments. The purpose of the assignments is to help you to learn the material in the course. They are worth an important fraction of the assessment and experience shows that those not making a good attempt at the assignments often do poorly in tests.

The course web site has a page listing the assignments, due dates, and resources. Assignments are weighted equally and are due in on Monday Monday at 12 pm (note: this is midday, NOT midnight). The assignments will be made available at least a week before the due date. You should check each assignment for submission details, as they will require electronic submission in PDF format only [note: hard copy submission is not allowed as we cannot trace submissions]. Before the assignment's due date you may resubmit as many times as you wish, but the most recent submission of a file will always overwrite previous submissions.

You must submit assignments as **PDF files**. Other formats are not acceptable and will result in a standard late penalty being applied. **Do not** use a proprietary file format such as .doc or .docx for example. We may use an automated system, e.g. TurnItIn, to check all submitted work in order to identify students submitting plagiarised work.

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.

Model solutions to the assignments will be posted some time after the assignment deadline, so that you can review and assess your own work. Comparing your work to the provided solutions is an important part of the learning.

Note that the mandatory course requirement is that you must submit reasonable attempts for at least 4 of 5 assignments. A "reasonable attempt" is a D (40%) or better. If you miss more than one of the assignments, contact the lecturer or the Senior Tutor as soon as possible. Students who have not met these mandatory requirements will be required to do make-up programming assignments in order to be able to pass the course.

## Laboratory Work

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The laboratories in the first half of the trimester are where you will perform the practical aspects of your assignments. During the lab you will apply the knowledge gained from the lectures in the proceeding week to complete a number of tasks. These tasks are split into Core tasks, Completion tasks, and Challenge tasks. Successfully performing of all the

Core tasks will enable you to get awarded up to 65% of the lab marks. By successfully performing all the Completion tasks enables you to be awarded a maximum of 80%, the Challenge tasks can take you up to 100%.

But simply performing the tasks will not necessarily ensure that you get the marks. You must clearly document your work in a lab report, and you must make sure you include code for the tasks with brief explanations in your report. During each lab you will have two hours to undertake tasks and document these in your lab report. Lab reports are to be submitted at the end of the week. If the lab report is not submitted by the end of the week then it will not be accepted and no marks will be given for that lab.

In the second half of the trimester there will be a group challenge to build and autonomous vehicle. This challenge is worth 25% of your total marks, part for the performance of the robot your groups builds, and part for the report. The provisional hand in for the autonomous vehicle report is Mon 13 Jun. Reports 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.

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## Tests

During the term there will be two tests on the material covered to date, each of which is worth 20% of your final grade.

The test will be administered during the normal lecture times, and will be held on 15 April and 30 May. If you cannot attend the test, please contact the course coordinator as soon as possible to make alternate arrangements.

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## Exams

There is no final exam for ENGR101 during 2016.

Bachelor of Engineering students should be aware that copies of their assessed work may be retained for inspection by an accreditation panel.

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## Test and Exam Archive

Previous tests and exams for ENGR101 are available through the university library website (<http://library.victoria.ac.nz/library-v2/collections/general-collections/exam-papers>) or our ECS [exam archive](#).

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## Plagiarism

Working Together and Plagiarism

We encourage you to discuss the principles of the course and assignments with other students, to help and seek help with programming details, problems involving the lab machines. However, any work you hand in must be your own work.

The [School policy on Plagiarism](#) (claiming other people's work as your own) is available from the course home page. Please read it. We will penalise anyone we find plagiarising, whether from students currently doing the course, or from other sources. Students who knowingly allow other students to copy their work may also be penalised. If you have had help from someone else (other than a tutor), it is always safe to state the help that you got. For example, if you had help from someone else in writing a component of your code, it is not plagiarism as long as you state (eg, as a comment in the code) who helped you in writing the method.

In ENGR 101, we may use an automated system, e.g. TurnItIn, to check all submitted work.

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## Use of Turnitin.com

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.

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## Passing ENGR 101

To pass ENGR 101, a student must satisfy all the mandatory requirements (see below) and gain at least a **C-** grade overall (50% minimum).

If you are a BE student, you should aim for a high grade because this course is fundamental to engineering. Also, you will require a 'B' average in your Part 1 courses to progress in your BE.

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## Mandatory Course Requirements

1. You must submit reasonable attempts (at least 40%) for at least 4 out of 5 assignments.
2. You must achieve a D grade or better in the AVC.

The reason for the mandatory requirements is that the practical and group skills involved in the assignments and AVC are an essential component of ENGR101, not tested by the tests.

Students who do not meet the mandatory requirements will receive a failing grade (K), even if they have high marks on the tests. Students who have missed assignments should contact the lecturer as soon as possible to make alternative

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arrangements to meet the mandatory requirements.

Any student who is concerned that they have been (or might be) unable to meet any of the MCRs because of exceptional personal circumstances, should contact the course coordinator as soon as possible.

## Rules & Policies

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Find key dates, explanations of grades and other useful information at <http://www.victoria.ac.nz/home/study>.

Find out about academic progress and restricted enrolment at <http://www.victoria.ac.nz/home/study/academic-progress>.

The University's statutes and policies are available at <http://www.victoria.ac.nz/home/about/policy>, except qualification statutes, which are available via the Calendar webpage at <http://www.victoria.ac.nz/home/study/calendar> (See Section C).

Further information about the University's academic processes can be found on the website of the Assistant Vice-Chancellor (Academic) at <http://www.victoria.ac.nz/home/about/avcacademic>

All students are expected to be familiar with the following regulations and policies, which are available from the school web site:

[Grievances](#)

[Student and Staff Conduct](#)

[Meeting the Needs of Students with Disabilities](#)

[Student Support](#)

[Academic Integrity and Plagiarism](#)

[Dates and Deadlines including Withdrawal dates](#)

[School Laboratory Hours and Rules](#)

[Printing Allocations](#)

[Expectations of Students in ECS courses](#)

The School of Engineering and Computer Science strives to anticipate all problems associated with its courses, laboratories and equipment. We hope you will find that your courses meet your expectations of a quality learning experience.

If you think we have overlooked something or would like to make a suggestion feel free to talk to your course organiser or lecturer.

[Course Outline as PDF](#)

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