

Engineering Mathematics Foundations - Course Outline

ENGR 121: 2016 Trimester 1

This document sets out the workload and assessment requirements for ENGR 121. 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.

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Course Outline

Objectives

By the end of the course, students should be able to:

1. *Read, interpret and manipulate mathematical expressions and equations in a variety of contexts.*
2. *Apply mathematical concepts and techniques to analyse engineering systems and solve engineering problems.*
3. *Demonstrate mastery of a range of fundamental mathematical techniques.*
4. *Creatively and collaboratively combine skills and knowledge from mathematics, physics, computing and engineering to model an engineering problem.*

Textbook

The textbook for ENGR 121 is: *Engineering Mathematics: A Foundation for Electronic, Electrical, Communications and Systems Engineers (4th Edition)*, by Anthony Croft, Robert Davison, Martin Hargreaves and James Flint, Pearson, 2012. We follow this book very closely, and it is also the text for ENGR 122 Engineering Mathematics with Calculus, so it will be very useful. It costs about \$144 at Vic Books.

Also recommended, but not required, is *Engineering Mathematics*, by K.A. Stroud, with Dexter J. Booth, Palgrave MacMillan, London. About \$133 at Vic Books.

Detailed lecture notes will also be posted on the course homepages from week to week.

Lectures, Labs and Tutorials

A [schedule](#) of lecture and lab topics is available online.

Lectures for ENGR 121 are:

Mon, Tue, Thur, Fri, all lectures are 10:00-10:50am in KK LT303

Students attend one two-hour lab each week, and students are also encouraged to attend one tutorial session each week. Sign-ups for labs and tuts will be in the first week of lectures using [myAllocator](#). Labs and tuts start in week two.

Lectures start on 29 February. The last day of lectures before Easter break is Weds 23 March; lectures resume after Easter on Thursday 31 March. There is a mid-Trimester break from Mon 25 April (ANZAC Day) to Fri 29 April; no lectures this week. The last lecture of the Trimester is on Fri 3 June.

Lab Times

Lab times are

Lab	Day	Time
α	Mon	4-6pm
β	Tue	3-5pm
γ	Wed	10-12noon
δ	Wed	1-3pm
ϵ	Wed	4-6pm

Lab numbers and dates are

Lab	Weeks	Date
1	2-3	7 - 18 March
2	5-6	4 - 15 April
3	8-9	2 - 13 May
4	11-12	23 May - 3 June

Please see the [schedule](#) for a description of what is to be covered during a particular lab.

Labs will start in Week Two and will be held in the pair CO219 and CO238.

Tutorial Times

To be advised

Tutorials start in Week Two. Students should sign up for at least one tutorial, but may come to more than one.

Practical Work - Assignments and Labs

One assignment will be given out at the end of each week, and your answers (hardcopy) should be handed back in the assignment return boxes **next to CO236** the following week, usually due before 1pm on Fridays. Note that assignment answers are submitted on paper, with a cover sheet, unlike Lab Exercises which are submitted online.

Assignments will be marked, and your hardcopy is written on and made available for you to collect, to provide feedback to students on their progress. As well as a numerical mark, any assignment which gets a mark of more than 25% will be considered to represent a satisfactory attempt. Each satisfactory assignment counts towards the ten percent in the final course grade for assignments. Late assignments will not be marked, and will be considered unsatisfactory. The tutorial sessions will provide useful help for doing the assignment for that week. Model answers will be posted online for each assignment, a few days after they are due in.

Six satisfactory assignments out of the total of eight that will be given out, will attract the full 10% credit towards the final grade. Fewer satisfactory assignments means a pro-rata reduced %. Assignments are an important way to learn what you need to know, for tests, labs, project and exam.

There is a two-hour lab each week except in weeks 1, 4, 7 and 10. Details are in the lab timetables above. Two weeks of labs is one lab session, and there will be a total of four lab sessions this Trimester for ENGR121. A lab exercise is to be submitted online at the end of each lab session. The four lab exercises are worth 5% each for a total of 20% towards your final grade. More assessment details are below.

Workload

In order to maintain satisfactory progress in ENGR 121, you should plan to spend an average of at least *twelve* hours per week or 150 hours per Trimester on this paper. A plausible and approximate breakdown for these hours would be:

- Lectures and tutorials: five hours per week
- Reading and preparation: two hours per week
- Assignments: two hours per week
- Labs: two hours per week plus one hour preparation, in weeks 2, 3, 5, 6, 8, 9, 11, 12.

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 121 is located on the second floor of the Cotton Building.

Staff

The course organiser for ENGR 121 is Mark McGuinness. The lecturers for the course are Peter Smith and Mark McGuinness. Mark will lecture the first six weeks of the course, and Pete the remaining weeks. Their contact details are:

- Mark McGuinness
 - [Cotton 323](#)
 - +64 4 463 5059
 - Mark.McGuinness@vuw.ac.nz
 - Office Hours TBA
-
- Peter Smith
 - [Cotton 539](#)
 - +64 4 463 6738
 - Peter.Smith@vuw.ac.nz
 - office hours TBA

The course administrator is

- Steven Archer
- [Cotton 363](#)
- +64 4 463 5233 ext 8316
- Steven.Archer@vuw.ac.nz

The course lab director and organiser of extra tutorial help is

- Howard Lukefahr
- [CO 252](#)
- +64 4 463 5233 x7288
- howard.lukefahr@ecs.vuw.ac.nz

Announcements and Communication and Course Forum

The main means of communication outside of lectures will be the ENGR 121 web area at http://ecs.victoria.ac.nz/Courses/ENGR121_2016T1/. There you will find, among other things, this document, the [lecture schedule](#), [Lecture Notes](#), [assignment handouts](#), and the [ENGR 121 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.

Assessment

Your grade for ENGR 121 will be determined based on the following assessment weightings:

<u>Item</u>	<u>Weight</u>	<u>Objectives addressed</u>
Lab exercises	20%	1,2,3,4
Assignments	10%	1,2,3
Two tests	10% each, 20% in total	1,2,3
Final examination	50%	1,2,3

If it is to your advantage, one or both test marks will be ignored and the final exam will be worth 60% or 70%. If it is to your advantage, Assignment marks will be ignored and an extra 10% will be added to the possible mark for the final exam. For example, if you do poorly in tests and assignments, your final grade will be based 80% on the final exam (and 20% on the lab exercises).

Tests and Exams

There will be two tests held during lecture times, one on Friday 1 April during the lecture time (10:00-10:50), and one in the week 16-20 May, during the Friday lecture on 20 May (10:00-10:50). In KK LT303. Please alert the course coordinator as early as possible if you cannot be there for a test.

There will be a final exam. held during the Victoria University examination period. The timetable for final examinations

will be available from the University web site and will be posted on a notice board outside the faculty office. The final examination will be three hours long. No computers or mobile phones will be allowed in the final examination, and calculators must be silent. Paper non-English to English dictionaries will be permitted. The examination period for trimester 1 is 6-29 June, 2016.

The timetable for final examinations will be available from the University web site and will be posted on a notice board outside the faculty office. The final examination will be **THREE** hours long. Paper non-English to English dictionaries will be permitted. The examination period for trimester 1 is 10 June - 29 June.

Sitting the exam, and obtaining at least 40% in that exam, is required to pass this course. If you cannot come to the exam due to some emergency, it is very important to contact the course coordinator or the Science Faculty Office as early as possible.

Penalties

Late assignments and lab exercises will not be marked or counted for assessment purposes. You can miss two assignments without losing any marks, as noted above, and no lab assignments. Any plagiarism is likely to result in zero marks for both parties.

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.

Mandatory Course Requirements

1. Attempt 3 of the 4 lab reports
2. Attempt both tests.
3. Obtain at least 40% in the final examination.

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

Passing ENGR 121

To pass ENGR 121, a student must satisfy Mandatory Course Requirements, and gain at least a **C-** grade overall.

Withdrawal

The last date for withdrawal from ENGR 121 with entitlement to a refund of tuition fees is Friday 11 March 2016. The last date for withdrawal without being regarded as having failed the course is Friday 13 May 2016 -- though later withdrawals may be approved by the Dean in special circumstances.

Rules & Policies

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](#)
