

# Engineering Mathematics Foundations - Course Outline

## ENGR 121: 2015 Trimester 1

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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.

### Objectives

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By the end of the course, students are expected to 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

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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 will cost about \$138 at Vic Books.

Also recommended, but not required, is *Engineering Mathematics*, by K.A. Stroud, with Dexter J. Booth, Palgrave MacMillan, London.

### Lectures, Tutorials, Laboratories, and Practical work

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

Lectures for ENGR 121 are:

Mon, Weds and Fri 15:10-16:00 in HMLT205, and

Thurs 15:10-16:00 in HMLT205

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

Lectures start on 2 March. The last day of lectures before Easter break is Thurs 2 April; lectures resume after Easter on Monday 20 April. The last lecture of the Trimester is on Fri 5 June.

### Lab Times

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Tuesday: 1:00 - 3:00 and 3:00 - 5:00

Wednesday: 10:00 - 12:00

Thursday: 2:00 - 4:00

Friday: 1:00 - 3:00 and 4:00 - 6:00

Labs will start in Week Two and will be held in CO219.

### Tutorial Times

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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

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One assignment will be given out at the end of each week, and will be due back in the assignment return boxes **next to CO236** the following week, usually 1pm on Fridays. Assignments will be marked, to provide feedback to students on their progress. As well as a numerical mark, any assignment which gets more than five out of twenty 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.

Eight satisfactory assignments out of the total of ten 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, and every two weeks the lab work is reported. Lab reports are due back during weeks 3, 5, 8, and 10. Reports that are completed in time will be marked and the marks from these lab reports will count 20% in total towards your final grade. The labs in week 5 are interrupted by Easter, so that the lab that would have been held on Good Friday 3 April, will instead be held on Fri 24 April after the Easter break.

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## 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: four hours per week
- Reading and preparation: two hours per week
- Assignments: two hours per week
- Labs: two hours per week, plus one hour preparation and one hour to write the report.

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

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## 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](mailto:Mark.McGuinness@vuw.ac.nz) \* Office Hours Fridays 10-12 noon
  
- Peter Smith
- Room to be advised
- Phone to be advised
- [Peter.Smith@vuw.ac.nz](mailto:Peter.Smith@vuw.ac.nz)

The course tutor is in charge of all assignment marking and all tutors:

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

In charge of ENGR121 labs and lab projects is

- Ciaran Moore
- [AM 228](#)
- +64 4 463 5233 x8931
- [Ciaran.Moore@ecs.vuw.ac.nz](mailto:Ciaran.Moore@ecs.vuw.ac.nz)

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## Announcements and Communication

The main means of communication outside of lectures will be the ENGR 121 web area at [http://ecs.victoria.ac.nz/Courses/ENGR121\\_2015T1/](http://ecs.victoria.ac.nz/Courses/ENGR121_2015T1/). There you will find, among other things, this document, the [lecture schedule](#) and [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. Often you will find that other students in this course respond sooner.

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## Assessment

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

Item	Weight	Objectives addressed
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Assignments	10%	1,2,3
Two tests	20%	1,2,3
Lab reports	20%	1,2,3,4
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 on 20% from lab reports and 80% from the final exam.

## Tests and Exams

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There will be two tests held during lecture times, one on the Monday of Week Six during the lecture time (3:10-4pm on 20 April), and one in Week Eleven, probably during the Monday lecture (3:10-4pm on 25 May). In HMLT205. Please alert the course coordinator 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 12 June-1 July, 2015.

## Penalties

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Late assignments and late lab reports will not generally be marked or counted for assessment purposes (unless by prior special arrangement or because of illness or other special circumstances) but may be used to meet mandatory course requirements. Any plagiarism is likely to result in zero marks for both parties.

## Plagiarism

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### 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 or solving your problem, it is not plagiarism as long as you state (eg, as a comment in the code) who helped you in writing the method or solving the problem.

## Mandatory Requirements

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1. Attempt both tests.
2. Hand in a reasonable attempt at four lab reports.
3. Obtain at least 45% in the final examination.

## Passing ENGR 121

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To pass ENGR 121, a student must satisfy mandatory requirements and gain at least a **C-** grade overall.

## Withdrawal

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The last date for withdrawal from ENGR 121 with entitlement to a refund of tuition fees is Friday 13 March 2015. The last date for withdrawal without being regarded as having failed the course is Friday 15 May 2015 -- though later withdrawals may be approved by the Dean in special circumstances.

## 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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