



Prescription

Further mathematical techniques employed by electronic and computer systems engineers, with emphasis on methods of calculus, differential equations and linear Algebra. There is an emphasis on engineering applications and use of software.

Course learning objectives

Students who pass this course will be able to:

1. Interpret, manipulate and derive expressions and properties of differential and integral calculus, and linear algebra.
2. Apply concepts and techniques of calculus and linear algebra to analyse engineering systems and solve engineering problems.
3. Demonstrate mastery of a range of fundamental techniques for solving problems in calculus and linear algebra.
4. Demonstrate an ability to effectively use approximation and numerical techniques, especially in the estimation of physical parameters.
5. Creatively and collaboratively combine skills and knowledge from mathematics, physics, computing and engineering to model an engineering problem.

Course content

Complex numbers; Introduction to linear algebra; Applications of differentiation; Integration of functions; Functions of several variables; Introduction to ordinary differential equations

Withdrawal from Course

Withdrawal dates and process:

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

Lecturers

Matt Visser (Coordinator)

Matt.Visser@vuw.ac.nz 04 4635115

321 Cotton, Kelburn

Mark McGuinness

Mark.McGuinness@vuw.ac.nz 04 4635059

323 Cotton, Kelburn

Teaching Format

During the trimester, there will be four lectures per week. 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.

Student feedback

Student feedback on University courses may be found at:
www.cad.vuw.ac.nz/feedback/feedback_display.php

Dates (trimester, teaching & break dates)

- Teaching: 08 July 2019 - 13 October 2019
- Break: 19 August 2019 - 01 September 2019
- Study period: 14 October 2019 - 17 October 2019
- Exam period: 18 October 2019 - 09 November 2019

Class Times and Room Numbers

08 July 2019 - 18 August 2019

- **Monday** 10:00 - 10:50 – LT206, Easterfield, Kelburn
- **Wednesday** 10:00 - 10:50 – LT206, Easterfield, Kelburn
- **Thursday** 10:00 - 10:50 – LT206, Easterfield, Kelburn
- **Friday** 10:00 - 10:50 – LT206, Easterfield, Kelburn

02 September 2019 - 13 October 2019

- **Monday** 10:00 - 10:50 – LT206, Easterfield, Kelburn
- **Wednesday** 10:00 - 10:50 – LT206, Easterfield, Kelburn
- **Thursday** 10:00 - 10:50 – LT206, Easterfield, Kelburn
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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.

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 internally and externally assessed through assignments, tests, lab reports, and a final examination.

Assessment Item	Due Date or Test Date	CLO(s)	Percentage
Assignments (weekly)		CLO: 1,2,3	10%
Two in-course tests (each 1 hour)		CLO: 1,2,3	20%
Lab reports (4 in total)		CLO: 1,2,3,4	20%
Final examination (3 hours)		CLO: 1,2,3	50%

Penalties

Late assignments will not be marked. Late lab reports will lose marks.

Extensions

Extensions will only be given in exceptional circumstances. Please communicate these circumstances to the course coordinator. Because assignments are weekly, extensions are rare.

Submission & Return

Assignments and lab reports will be submitted online through the course website. Feedback will also be provided online.

Workload

In order to maintain satisfactory progress in ENGR 122, you should plan to spend an average of at least fourteen hours per week or a total of 150 hours on this course.

Teaching Plan

Communication of Additional Information

Announcements, class notes, and assignments will be posted on the website (either through blackboard or the course homepage), which will be updated frequently.

Links to General Course Information

- Academic Integrity and Plagiarism: <https://www.victoria.ac.nz/students/study/exams/integrity-plagiarism>
- Academic Progress: <https://www.victoria.ac.nz/students/study/progress/academic-progress> (including restrictions and non-engagement)
- Dates and deadlines: <https://www.victoria.ac.nz/students/study/dates>
- Grades: <https://www.victoria.ac.nz/students/study/progress/grades>

- Special passes: Refer to the Assessment Handbook, at <https://www.victoria.ac.nz/documents/policy/staff-policy/assessment-handbook.pdf>
- Statutes and policies, e.g. Student Conduct Statute: <https://www.victoria.ac.nz/about/governance/strategy>
- Student support: <https://www.victoria.ac.nz/students/support>
- Students with disabilities: https://www.victoria.ac.nz/st_services/disability/
- Student Charter: <https://www.victoria.ac.nz/learning-teaching/learning-partnerships/student-charter>
- Terms and Conditions: <https://www.victoria.ac.nz/study/apply-enrol/terms-conditions/student-contract>
- Turnitin: <http://www.cad.vuw.ac.nz/wiki/index.php/Turnitin>
- University structure: <https://www.victoria.ac.nz/about/governance/structure>
- VUWSA: <http://www.vuwsa.org.nz>

Offering CRN: [26053](#)

Points: 15

Prerequisites: ENGR 121 or MATH 141;

Restrictions: the pair (MATH 142, 151)

Duration: 08 July 2019 - 10 November 2019

Starts: Trimester 2

Campus: Kelburn