

School of Engineering and Computer Science

Te Kura Mātai Pūkaha, Pūrorohiko



Prescription

This course introduces electrical circuit analysis. Topics covered include circuit theorems, operational amplifiers circuits. It introduces the Laplace transform as an analysis tool.

Course learning objectives

Students who pass this course should be able to:

1. Use a range of circuit analysis techniques to find unknown voltages and currents (BE graduate attribute 3(a))
2. Apply the basic concepts of feedback to amplifier circuits (BE graduate attribute 3(a))
3. Calculate common Laplace transforms from first principles and by using a tables of common transforms and properties (BE graduate attribute 3(a))
4. Produce mathematical models of electronic circuits and electromechanical systems and apply Laplace theory to the analysis of electronic circuits, electromechanical systems and communication systems (BE graduate attribute 3(c)) and 3(b))
5. Use software such as the Matlab programming language to solve problems in linear systems and signals (BE graduate attribute 3(f)).

Withdrawal from Course

Withdrawal dates and process:

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

Lecturers

Paul Teal (Coordinator)

paul.teal@vuw.ac.nz 04 4635966

420 Alan MacDiarmid Building, Kelburn

Teaching Format

During the trimester there will be two lectures and one tutorial each week.

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: 02 March 2020 - 07 June 2020
- Break: 13 April 2020 - 27 April 2020
- Study period: 08 June 2020 - 11 June 2020
- Exam period: 12 June 2020 - 27 June 2020

Class Times and Room Numbers

02 March 2020 - 22 March 2020

- **Monday** 13:10 - 14:00 – LT206, Easterfield, Kelburn
- **Wednesday** 13:10 - 14:00 – LT206, Easterfield, Kelburn
- **Friday** 13:10 - 14:00 – LT001, Hugh Mackenzie, Kelburn

27 April 2020 - 07 June 2020

- **Monday** 13:10 - 14:00 – LT206, Easterfield, Kelburn
- **Wednesday** 13:10 - 14:00 – LT206, Easterfield, Kelburn
- **Friday** 13:10 - 14:00 – LT001, Hugh Mackenzie, Kelburn

Other Classes

2 hour laboratories will be held in weeks 2, 4, 6, 8, and 10.

Set Texts and Recommended Readings

Required

There are no required texts for this offering.

Recommended

There is no required textbook for ECEN 203; however, supplemental reading of a relevant textbook to complement lectures, assignments, and tests is strongly encouraged.

Course notes will also be available to complement lectures, but are generally not sufficient to replace them.

- Nilsson & Riedel, *Electric Circuits*, 9th Edition
- Hayt, Kemmerly & Durbin, *Engineering Circuit Analysis*, 8th Edition
- Alexander & Sadiku, *Fundamentals of Electric Circuits*, 5th Edition

Mandatory Course Requirements

In addition to achieving an overall pass mark of at least 50%, students must:

- Achieve at least a **D** in the examination.

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

A large part of this course involves the mastery of skills essential for progression in the ECEN/ELCO specialisation of the BE/BSc degree. Hence much of the assessment will be via tests in weeks 3, 5, 9, and 11.

Five laboratories will also be offered during weeks 2, 4, 6, 8 and 10. Activities in these laboratories will reinforce and illustrate material covered in lectures.

Tutorial questions will be given out fortnightly and will be discussed in the tutorial slot.

Material from laboratories and tutorials will be assessed in the fortnightly tests and in the exam.

Assessment Item	Due Date or Test Date	CLO(s)	Percentage
Assignment 1	Week 3	CLO: 1,2,3	5%
Test 1	Week 5	CLO: 1,2,3	10%
Assignment 2	Week 9	CLO: 1,2,3	5%
Test 2	Week 11	CLO: 1,2,3	10%
Lab 1	Week 3	CLO: 1,4,5	2.5%
Lab 2	Week 5	CLO: 1,4,5	2.5%
Lab 3	Week 6	CLO: 1,4,5	10%
Lab 4	Week 9	CLO: 1,4,5	2.5%
Lab 5	Week 11	CLO: 1,4,5	2.5%
Exam (2 hours)		CLO: 1,2,3	50%

Penalties

Work submitted late will be penalised at 10%/day; work submitted more than a week late will not be marked.

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

Most assignments will be handed to the lecturer at the start of a lecture, and will also be returned at lectures.

Workload

In order to maintain satisfactory progress in ECEN 203, you should plan to spend an average of 10 hours per week on this paper. A plausible and approximate breakdown for these hours would be:

- Lectures and tutorials: 3
- Readings: 1
- Assignments or Labs: 4
- Practice questions: 2

Teaching Plan

See: https://ecs.wgtn.ac.nz/Courses/ECEN203_2020T1/LectureSchedule

Communication of Additional Information

The main means of communication outside of lectures will be the ECEN 203 web area at https://ecs.wgtn.ac.nz/Courses/ECEN203_2020T1/.

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-progress> (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: [18510](#)

Points: 15

Prerequisites: MATH 142 or ENGR 122; ENGR 142 or PHYS 115;

Restrictions: PHYS 235

Duration: 02 March 2020 - 28 June 2020

Starts: Trimester 1

Campus: Kelburn