

Analogue Circuits and Systems - Course Outline

ECEN 203: 2010 Trimester 1

This document sets out the workload and assessment requirements for ECEN 203. 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.

Course Description

The aim of this course is to introduce students, in a practically-oriented way, to a number of topics in analogue electronics, including circuit theorems, transducers, power supplies, semiconductor devices, transistor amplifiers, operational amplifiers and circuits. It builds on the basic circuit theory developed in PHYS 115 and is an integral part of the Electronic and Computer Systems Engineering major. At the end of the course students do a design project which includes designing, laying out and populating a printed circuit board. ECEN 203 is a prerequisite for further courses in analogue electronics.

Prerequisites

ENGR101, MATH142 or with special permission MATH141

Restrictions: PHYS 235, ELEN 201

Objectives

On successfully completing this course, students should have:

- 1) both theoretical and practical experience of (BE graduate attributes 3(a,b)).
 - the methods and uses of circuit analysis techniques
 - the use and limitations of standard measuring instruments
 - the major types of diodes and their uses and with the structure and operation of bipolar junction and field effect transistors
 - the basic concepts of feedback and its application to amplifier circuits
 - a range of standard operational amplifier circuits
- 2) experience of the design and population of printed circuit boards (BE graduate attributes 3(b,c)).
- 3) the ability to maintain a detailed laboratory log book (BE graduate attributes 2(b)).
- 4) the ability to write an appropriate laboratory report in a suitable format (BE graduate attributes 2(b)).

Course Material and Textbooks

There are no set textbooks, however the following are useful references:

"Microelectronic Circuits", 3rd edition, Sedra and Smith

"The Art of Electronics", Horowitz and Hill

A laboratory manual will be provided and students will be required to have a laboratory log book. The log book should be a bound notebook eg A4, 1J5 containing squared paper. A scientific calculator is also required and access to a computer is recommended.

Lectures, Tutorials, Laboratories, and Practical work

Lectures: Monday, Tuesday 5-6 pm, LB118.

Labs: One 3-hour lab/week: Wed 9 am -12 pm or 2 pm - 5 pm or Thu 2 pm - 5 pm LB214.

Tutorials: Wednesday 1-2 pm, as required.

Assignments

Assignments will be set on a Wednesday at 1 or 2 week intervals and are due one week after being set.

Workload

On average, students should plan to spend a minimum of 10 hours per point i.e. 150 hours for a 15 point course, or 10-12 hours per week, including exam periods, in order to achieve an average grade in this course.

School of Engineering and Computer Science

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

The notice board for ECEN 203 is located on the second floor of the Cotton Building.

Staff

Dr Malcolm Ingham R Room LB515, Tel: 463 5216, Email: malcolm.ingham@vuw.ac.nz (Course Organiser)

Dr Petrik Galvosas, Room LB307, Email: petrik.galvosas@vuw.ac.nz

Announcements and Communication

The main means of communication outside of lectures will be the Course Blackboard website. Please check this site regularly for all course information.

Assessment

Your grade for ECEN 203 will be determined based on the following assessment weightings:

	Length	Due Date	Weighting	Objective Assessed	
Assignments	n/a	Approximately Weekly	5%	1	
Laboratory Reports	4-6 pages each	(1) 19 April (2) 17 May	15% each	1,4	
Design Project	4-6 pages	11 June	15%	1,2,4	
Tests (2)	1 hour each	27 April 31 May	20% each	1	
Laboratory Logbook	n/a	Weekly	10%	1,3	

Tests and Exams

Description of tests and what to do if you can't attend them

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, electronic calculators or similar device will be allowed in the final examination. Paper non-English to English dictionaries will be permitted. The examination period for trimester 1 is 7 June - 30 June.

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 Requirements

To be deemed to have completed the course, a student must complete (1) the laboratory course; (2) all items of assessment; and (3) submit at least 50% of course assignments.

Important dates are:

(1) Tests: Tuesday 27 April, 5.00 pm, LB LT118

Monday 31 May, 5.00 pm, LB LT118

(2) 1st report: set Monday, 29 March; due Monday 19 April by 5 pm

2nd report: set Friday, 7 May; due Monday 17 May by 5 pm

(3) Design report: due Friday 11 June by 5 pm

(4) Logbook: handed in at the end of every lab session

(5) Assignments: set Wednesday at 1 or 2 week intervals; due 1 week after being set

Passing ECEN 203

To pass ECEN203, a student must satisfy mandatory requirements and gain at least a **C** grade overall.

Withdrawal

The last date for withdrawal from ECEN201 with entitlement to a refund of tuition fees is Friday, 12th March 2010 (the end of week 2 of trimester). The last date for withdrawal without being regarded as having failed the course is Friday, 14th May 2010 (the end of week 9) -- 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.
