Advanced Communications Engineering - Course Outline
ECEN 410: 2013 Trimester 2

This document sets out the workload and assessment requirements for ECEN 410. 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

Upon completion of the course, the students should be able to demonstrate the understanding of:

1. Communication systems from a designer's perspective 3(a).
2. Wireless channel characteristics and modeling, wireless communication techniqes such as diversity, MIMO, etc 3(a) 3(b) 3(c).
3. Advanced communications technologies, including multicarrier, spread spectrum and spatial diversity systems 3(a).
4. Communication system design basics and computer simulation, 3(a) 3(e)
5. Wireless networks (including Cellular and WLAN/WPAN) system design, including capacity and performance planning and optimization 3(f).

Objectives 1-4 are assessed primarily by written assignments and the examination. Objectives 5 is assessed primarily by the project.

Textbook

The reading material for ECEN 410 is:

- *D.Tse and P. Viswanath: Fundamentals of Wireless Communication, Cambridge University Press, May 2005*.
- *Andrea Goldsmith: Wireless Communications, Cambridge University Press*
- along with other notes or materials required

Lectures, Tutorials, Laboratories, and Practical work

A schedule of lecture topics, readings, and assignment due dates is available online

There will be a single **two** hour lecture on Tuesdays 11-11:50, followed by a tutorial on Thursdays 11-11:50, both in Easterfield 201. The tutorial will be conducted by the tutor, Fatih Ustok.

Assignments and Projects

Assignments consisting of problems will be handed out throughout the course.

In addition, the students will complete Matlab-based lab exercises/projects.

Each student will be required to research and give a talk on one of the course topics to the class. A list of key papers that are to be reviewed shall be provided.

Workload

I In order to maintain satisfactory progress in ECEN 410, you should plan to spend an average of at least *15 hours* hours per week on this paper. A plausible and approximate breakdown for these hours would be:

- Lectures and tutorials: 3
- Readings: 6
- Assignments/projects: 6

School of Engineering and Computer Science

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

Staff

The course coordinator for ECEN 410 is Dr Pawel Dmochowski. The lecturer for the course are Dr Mansoor Shafi. Their

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- Dr Mansoor Shafi
- +64 4 382 5249
- Mansoor.Shafi@telecom.co.nz

- Dr Pawel Dmochowski
- AM227
- +64 4 463 5948
- Pawel.Dmochowski@ecs.vuw.ac.nz

The Tutor for the course is Fatih Ustok

Announcements and Communication

The main means of communication outside of lectures will be the ECEN 410 web area at http://ecs.victoria.ac.nz/Courses/ECEN410_2013T2/. There you will find, among other things, this document, the lecture schedule and assignment handouts, and the ECEN 410 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 ECEN 410 will be determined based on the following assessment weightings:

Item	Weight
Assignments and Class Participation	25%
Matlab Project	25%
Research Project and Presentation	25%
Test	25%

Tests and Exams

There is not final examination for the course. One in class test will be held on a date to be specified. No computers, electronic calculators or similar device will be allowed. Paper non-English to English dictionaries will be permitted.

Practical Work

N/A

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

1. *Student must pass the in house exam to pass the course.*

Passing ECEN 410

To pass ECEN 410, a student must satisfy mandatory requirements and gain at least a **C** grade overall.

Withdrawal

The last date for withdrawal from ECEN 410 with entitlement to a refund of tuition fees is Friday 26 July 2013. The last date for withdrawal without being regarded as having failed the course is Friday 27 September 2013 -- though later

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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