Advanced Communications Engineering - Course Outline

ECEN 410: 2011 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. 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).
6. The basic principles of source and channel coding 3(a) 3(f).

Objectives 1-4 and 6 are assessed primarily by written assignments and the examination. Objectives 5 is assessed primarily by the project.

Reading Materials

The reading material for ECEN 410 is:

- *D.Tse and P. Viswanath: Fundamentals of Wireless Communication, Cambridge University Press, May 2005*.
- *W. B. Kleijn: A Basis for Source Coding, 2010*
- we will also use: *Andrea Goldsmith: Wireless Communications, Cambridge University Press*
- along with other notes or materials required_

Workload

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

Plagiarism and Collaboration

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.

Please read the School Policy on Plagiarism. 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 (e.g., as a comment in the code) who helped you in writing it.

Staff and Administration

The course coordinator for ECEN 410 is Bastiaan Kleijn. The lecturers for the course are Mansoor Shafi and Bastiaan Kleijn. Their contact details are on their web pages.

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

Assessment, Tests and Exams

ECEN 410 will have a three-hour exam. Your grade for ECEN 410 will be determined based on the following assessment weightings:

Item	Weight
Assignments	15%
Projects 1+2	35%
Project 3	15%
Exam	35%

Mandatory Requirements

1. *Students have to pass the assignments and the projects to pass this course.*
2. *No late assignments or project reports will be accepted.*

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 Fri 22 July 2011. The last date for withdrawal without being regarded as having failed the course is Fri 23 Sept 2011 -- though later withdrawals may be approved by the Dean in special circumstances.