



The University of Southern Queensland

Course specification

The current and official versions of the course specifications are available on the web at <http://www.usq.edu.au/coursespecification/current>.

Please consult the web for updates that may occur during the year.

Description: Wireless and Internet Technology

Subject	Cat-nbr	Class	Term	Mode	Units	Campus
CSC	8407	86234	1, 2009	EXT	1.00	Toowoomba

Academic group:	FOSCI
Academic org:	FOS003
Student contribution band:	2
ASCED code:	020199

STAFFING

Examiner: Zhongwei Zhang

Moderator: Ron Addie

REQUISITES

Pre-requisite: (CSC3407 and CSC3413) or Students must be enrolled in one of the following Programs: MCOP or MPIT

RATIONALE

Networks are of increasing importance in commerce, education, and culture and absorb an ever-increasing share of the national budget. This course focuses on three topics of great interest and importance at the moment: (i) quality of service in the Internet and the means by which it can be achieved; (ii) wireless communication technology as used in mobile phone networks and the 802.11 standards (also known as WiFi); and (iii) optical networks, which now form the basic infrastructure of national, metropolitan, and increasingly, local access networks. These topics are at the leading edge of development of modern communication networks and an understanding of them will help to equip the student with the insights they need in a career in communications technology. Note that students who have completed CSC3420 Mobile Internet Technology may not enrol in this course.

SYNOPSIS

The first topic in the course is quality of service in the Internet, with particular emphasis on AQM's such as RED & ARED, and also the DiffServ standard for managing quality of service. Students will use the NS2 simulator to gain an understanding of these topics. The second topic treated is wireless communication as used in GSM and CDMA mobile phones and the 802.11 standard for wireless LANs. The third and last major topic of the course is optical networks including wave divisions multiplexing, design of robust networks taking into account the WDM and Synchronous Digital Hierarchy network layers. The assessment for this postgraduate course consists of assignments and an end-of-semester examination. Note that students who have completed CSC3420 Wireless and Internet Technology may not enrol in this course.

OBJECTIVES

On successful completion of this course students should be:

1. aware of the range of new communication technologies and designs (Assignment 1 & 2, Project);
2. able to analyse these technologies and design networks which make use of them (Assignment 1 & 2, Project);
3. able to analyse the performance of networks including queuing delays, loss, and security and reliability (Assignment 1 & 2, Project).

TOPICS

	Description	Weighting (%)
1.	Internet Performance	10.00
2.	Guaranteed Performance in the Internet	10.00
3.	Simulation of the Internet	10.00
4.	Wireless Transmission	10.00
5.	Antennas, Propagation & Spread Spectrum	10.00
6.	Medium Access Control	10.00
7.	Security for Wireless Networking	10.00
8.	Wave Division Multiplexing	10.00
9.	Reliability of WDM Networks	10.00
10.	Generalised MPLS	10.00

TEXT and MATERIALS required to be PURCHASED or ACCESSED

ALL textbooks and materials are available for purchase from USQ BOOKSHOP (unless otherwise stated). Orders may be placed via secure internet, free fax 1800642453, phone 07 46312742 (within Australia), or mail. Overseas students should fax +61 7 46311743, or phone +61 7 46312742. For costs, further details, and internet ordering, use the 'Textbook Search' facility at <http://bookshop.usq.edu.au> click 'Semester', then enter your 'Course Code' (no spaces).

REFERENCE MATERIALS

Reference materials are materials that, if accessed by students, may improve their knowledge and understanding of the material in the course and enrich their learning experience.

STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Private Study	159.00

ASSESSMENT DETAILS

Description	Marks out of	Wtg (%)	Due date
ASSIGNMENT 1	100.00	20.00	24 Apr 2009
ASSIGNMENT 2	100.00	20.00	29 May 2009
PROJECT	100.00	40.00	12 Jun 2009

IMPORTANT ASSESSMENT INFORMATION

- 1 Attendance requirements:**

There are no attendance requirements for this course. However, it is the students' responsibility to study all material provided to them or required to be accessed by them to maximise their chance of meeting the objectives of the course and to be informed of course-related activities and administration.
- 2 Requirements for students to complete each assessment item satisfactorily:**

To satisfactorily complete an assessment item a student must achieve at least 50% of the marks or a grade of at least C-. Students do not have to satisfactorily complete each assessment item to be awarded a passing grade in this course. Refer to Statement 4 below for the requirements to receive a passing grade in this course.
- 3 Penalties for late submission of required work:**

If students submit assignments after the due date without (prior) approval of the examiner then a penalty of 5% of the total marks gained by the student for the assignment may apply for each working day late up to ten working days at which time a mark of zero may be recorded. No assignments will be accepted after model answers have been posted.
- 4 Requirements for student to be awarded a passing grade in the course:**

To be assured of receiving a passing grade a student must achieve at least 50% of the total weighted marks available for the course.
- 5 Method used to combine assessment results to attain final grade:**

The final grades for students will be assigned on the basis of the weighted aggregate of the marks obtained for each of the summative assessment items in the course.
- 6 Examination information:**

There is no examination in this course.
- 7 Examination period when Deferred/Supplementary examinations will be held:**

As there are no examinations in this course, there will be no deferred or supplementary examinations.
- 8 University Regulations:**

Students should read USQ Regulations 5.1 Definitions, 5.6. Assessment, and 5.10 Academic Misconduct for further information and to avoid actions which might contravene University Regulations. These regulations can be found at the URL <http://www.usq.edu.au/corporateservices/calendar/part5.htm> or in the current USQ Handbook.

ASSESSMENT NOTES

- 9 The due date for an assignment is the date by which a student must despatch the assignment to the USQ. The onus is on the student to provide proof of the despatch date, if requested by the Examiner.**

- 10 Students may be required to provide a copy of assignment submitted for assessment purposes. Such copies should be despatched to the USQ within 24 hours of receipt of a request to do so.
- 11 In accordance with University's Policy, the Examiner may grant an extension of the due date of an assignment in extenuating circumstances.
- 12 Students who have undertaken all of the required assessments in a course but who have failed to meet some of the specified objectives of a course within the normally prescribed time may be awarded the temporary grade: IM (Incomplete - Make up). An IM grade will only be awarded when, in the opinion of the examiner, a student will be able to achieve the remaining objectives of the course after a period of non directed personal study.
- 13 Students who, for medical, family/personal, or employment-related reasons, are unable to complete an assignment or to sit for an examination at the scheduled time, may apply to defer an assessment in a course. Such a request must be accompanied by appropriate supporting documentation. One of the following temporary grades may be awarded IDS (Incomplete - Deferred Examination); IDM (Incomplete Deferred Make-up); IDB (Incomplete - Both Deferred Examination and Deferred Make-up).