



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: Computer Network Programming						
Subject	Cat-nbr	Class	Term	Mode	Units	Campus
CSC	8415	86655	1, 2009	EXT	1.00	Toowoomba

Academic group:	FOSCI
Academic org:	FOS003
Student contribution band:	2
ASCED code:	020113

STAFFING

Examiner: Zhongwei Zhang
Moderator: Hua Wang

REQUISITES

Pre-requisite: (CSC2404 and CSC3407) or Students must be enrolled in one of the following Programs: MCOP or MPIT or GCEN or GDET or METC

RATIONALE

Programming using TCP/UDP transport layer interface is the base for developing all network software and applications. This course addresses the programming with TCP/UDP interface for client-server network applications on the Internet.

SYNOPSIS

This course addresses development of network applications and software on the Internet. It covers both the TCP/UDP transport layer programming interface and the methodology of design and implementation of real client-server network applications. Upon completion of this course, students will have a good understanding of the TCP/UDP network programming interface and be able to develop non-trivial robust client-server network applications on the Internet. The topics include: Socket address, Elementary TCP and UDP sockets, Design and implementation of TFTP, Daemon processes and inetd superserver, Reliable UDP communication and Multicasting.

OBJECTIVES

On successful completion of this course students will be able to:

1. understand the TCP/UDP network programming interface (Assignment 1 and 2);
2. understand the methodology of design and implementation of client-server network applications (Assignment 1, Project);
3. develop non-trivial and robust network applications (Assignment 2, Project).

TOPICS

Description	Weighting (%)
1. Elementary TCP and UDP	40.00
1.1. Introduction to TCP/UDP (8%)	
1.2. Sockets Introduction (8%)	
1.3. Elementary TCP Sockets (8%)	
1.4. TCP Client-Server Example (13%)	
1.5. Elementary UDP Sockets (13%)	
2. Network Programming Design and Implementation of TFTP: a Case Study	30.00
3. Advanced Topics	30.00
3.1. Daemon Processes and inetd Superserver (10%)	
3.2. Advanced UDP Sockets (10%)	

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).

This course requires UNIX/LINUX environment.

Stevens, WR, Fenner, B & Rudoff, A 2004, *UNIX network programming, The sockets networking API*, 3rd edn, Addison-Wesley, Boston, MA, Vol 1.

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.

Peterson, LL & Davie, BS 2003, *Computer networks: a system approach*, 3rd edn, Morgan Kaufmann Publishers, San Francisco, California.

Stevens, WR & Rago, SA 2005, *Advanced programming in the UNIX(R) environment*, 2nd edn, Addison-Wesley, Reading, Mass.

STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Private Study	165.00

ASSESSMENT DETAILS

Description	Marks out of	Wtg (%)	Due date
ASSIGNMENT 1	20.00	20.00	31 Mar 2009
ASSIGNMENT 2	20.00	20.00	02 Jun 2009
PROJECT	60.00	60.00	16 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.
- 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.
- 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 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 aggregate of the weighted 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:**

There will be no Deferred or Supplementary examinations in this course.
- 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.**

OTHER REQUIREMENTS

- 1 Students will require access to e-mail and internet access to USQConnect for this course.
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