



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 Systems and Communications Protocols

Subject	Cat-nbr	Class	Term	Mode	Units	Campus
ELE	3305	86332	1, 2009	EXT	1.00	Toowoomba

Academic group:	FOENS
Academic org:	FOES04
Student contribution band:	2
ASCED code:	031305

STAFFING

Examiner: Alexander Kist
Moderator: Mark Phythian

OTHER REQUISITES

Recommended prior or concurrent study: ELE1301 and ELE2303

SYNOPSIS

Computing and data communications have converged, such that data communications has become an integral part of many computer systems. This course is based around two central themes. The first is the logical extension of the material covered in the preceding Computer Engineering courses. This involves a more detailed study of advanced computer design and operating system topics including memory management, virtual memory, process management, cache memory, processor architectures and performance. The second theme is the design, implementation and use of data communication systems. This section, comprising approximately half the course, covers local area network protocols such as Ethernet, together with higher level protocols such as TCP/IP. An in-depth understanding of the theoretical and practical operation of these protocols and the Internet is emphasised by implementation examples.

OBJECTIVES

The course objectives define the student learning outcomes for a course. The assessment item(s) that may be used to assess student achievement of an objective are shown in parenthesis. On completion of this course, students should be able to:

1. analyse the structure of a given operating system kernel, and identify the relationship between the various subsystems (assignment 1 and exam);
2. predict the expected performance of memory and disk systems, and interpret the measured performance of disk/memory cache systems (assignment 1 and exam);
3. justify the presence of kernel-level services (assignment 1 and exam);
4. select and justify appropriate methods of data compression, encryption and error checking for local- and wide-area networks (exam);

5. interpret data communications standards documents such as Internet RFC's (assignment 2 and exam);
6. interpret protocol frames found in a data communications system, and provide explanations for the observed behaviour of communicating entities (assignment 2 and exam).

TOPICS

	Description	Weighting (%)
1.	Operating Systems	25.00
2.	Hardware and Architecture	15.00
3.	Data Communications and Protocols	60.00

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).

'ELE3305 Computer systems and communications protocols: course notes' (Available: <http://www.usqstudydesk.usq.edu.au>).

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.

Comer, D 2004, *Computer networks and internets: with Internet applications*, 4th edn, Pearson Prentice Hall, Upper Saddle River, New Jersey.

Halsall, F 2005, *Computer networking and the internet*, 5th edn, Addison Wesley, Harlow.

Silberschatz, A 2004, *Operating system concepts*, 7th edn, John Wiley & Sons, Hoboken, New York.

Tanenbaum, A 2002, *Computer Networks*, 4th edn, Pearson Prentice Hall, Upper Saddle River, New Jersey.

Tanenbaum, A 2007, *Modern Operating Systems*, 3rd edn, Pearson Prentice Hall, Upper Saddle River, New Jersey.

STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Assessments	52.00
Examinations	2.00
Private Study	101.00

ASSESSMENT DETAILS

Description	Marks out of	Wtg (%)	Due date
ASSIGNMENT 1	200.00	20.00	23 Apr 2009
ASSIGNMENT 2	200.00	20.00	05 Jun 2009
2 HOUR CLOSED EXAMINATION	600.00	60.00	END S1 (see note 1)

NOTES

1. Student Administration will advise students of the dates of their examinations during the semester.

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 extenuating circumstances then a penalty of 5% of the assigned mark may apply for each working day late up to a maximum of ten working days at which time a mark of zero can be recorded for that assignment.
- 4 Requirements for student to be awarded a passing grade in the course:
To be assured of receiving a passing grade in a course a student must obtain 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 weighted aggregate of the marks (or grades) obtained for each of the summative assessment items in the course.
- 6 Examination information:
In a Closed Examination, candidates are allowed to bring only writing and drawing instruments into the examination.
- 7 Examination period when Deferred/Supplementary examinations will be held:
Any Deferred or Supplementary examinations for this course will be held during the examination period at the end of the semester of the next offering of 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

- 1 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.
- 2 Students must retain a copy of each item submitted for assessment. This must be produced within five days if required by the Examiner.
- 3 In accordance with University's Assignment Extension Policy (Regulation 5.6.1), the examiner of a course may grant an extension of the due date of an assignment in extenuating circumstances.
- 4 The Faculty will normally only accept assessments that have been written, typed or printed on paper-based media.
- 5 The Faculty will NOT accept submission of assignments by facsimile.
- 6 Students who do not have regular access to postal services or who are otherwise disadvantaged by these regulations may be given special consideration. They should contact the examiner of the course to negotiate such special arrangements.
- 7 In the event that a due date for an assignment falls on a local public holiday in their area, such as a Show holiday, the due date for the assignment will be the next day. Students are to note on the assignment cover the date of the public holiday for the Examiner's convenience.
- 8 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 one of the temporary grades: IM (Incomplete - Make up), IS (Incomplete - Supplementary Examination) or ISM (Incomplete -Supplementary Examination and Make up). A temporary 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.
- 9 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).

OTHER REQUIREMENTS

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