

Computer Structures and Networks G – 6687

Unit Outline 2009

Faculty of Information Sciences and Engineering

University of Canberra

*Australian Government Higher Education (CRICOS)
Registered Provider number: #00212K*

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This Unit Outline must be read in conjunction with:

- a) *Studying at the University of Canberra: A Guide to Policies and Procedures*, which sets out University-wide policies and procedures, including information on matters such as plagiarism, grade descriptors, moderation, feedback and deferred exams, and is available at <http://www.canberra.edu.au/student-services>
- b) *Guide to Student Services at the University of Canberra*, and is available at <http://www.canberra.edu.au/student-services>
- b) Any additional information specified in section 6f.

1: General Information

- 1a Unit title**
Computer Structures and Networks
- 1b Unit number**
6687
- 1c Semester and year offered**
S2, 2009
- 1d Credit point value**
3CP
- 1e Unit level**
Graduate (G)
- 1f Name of Unit Convener and contact details (including telephone and email)**
Dipl.-Ing. C. Chlap, 6201 2391, Chris.Chlap@canberra.edu.au, Office 11B16
Name of Unit Moderator and contact details (including telephone and email)
Dr. Dharmendra Sharma, 6201 2153, Dharmendra.Sharma@canberra.edu.au, Office 11B13.
- 1g Administrative contact details (including name, location, telephone and email)**
The School Office 11B14, Ph: 6201-2417/6201-2153, email: ise@canberra.edu.au

2: Academic Content

2a Unit description and learning outcomes

Unit description: This unit provides an overview of computer architecture, multi-processing, inter-process communications, memory management and I/O device handling. These topics will be enhanced with study of protocol architectures, operating system programming interfaces, network management and client-server computing models. Students will be required to complete a number of programming assignments in selected programming languages.

Learning outcomes: On completion of this unit students will have a sound understanding of how computers operate and how they communicate with each other. Students will be able to design and implement simple networking applications that use system calls to communicate with other machines.

2b Prerequisites and/or co-requisites

Computers and Programming (G)

3: Delivery of Unit and Timetable

3a Delivery mode

This subject is delivered on campus with weekly lectures and tutorials/labs, as per UC timetable for the semester.

3b Schedule of topics/lectures/tutorials/practicals/field classes by week

Week	Activity
1	Hardware Concepts
2	Operating System Concepts
3	Systems Programming Languages (C++)
4	Systems Programming APIs (WIN32)
5	Application Frameworks
6	Shell Programming
7	Assignment 1 Discussion
8	<i>class free period</i>
9	<i>class free period</i>
10	Network Hardware
11	Network Protocols
12	Network Protocol Implementation
13	Network Programming
14	Assignment 2 Discussion
15	Revision and Examination Topics.

4: Unit Resources

4a Lists of required texts/readings

Required Texts:

You will require one textbook that serves as a reference for Systems Programming. The following books are recommended, although several other suitable texts are available.

WIN32 System Services, 3rd Edition,
Marshall Brain and Ron Reeves, Prentice-Hall.

WIN32 System Programming
Johnson M. Hart, Addison Wesley.

You will also require one textbook that serves as a reference for TCP/IP Networking. The following books are recommended, although several other suitable texts are available.

Computer Networking, 4th Edition,
Kurose and Ross, Addison Wesley 2008.

Internetworking with TCP/IP Volume 1, 5th Edition,
Douglas Comer, Prentice-Hall 2005.

Supplementary readings:

All of the titles listed above contain useful supplementary information.

Online materials:

Lecture materials, tutorial questions and answers, assignment specifications, and other details are available on the subject web site.

4b Materials and equipment

While the computers and software in the Building 11 Student Laboratories **may** be used in this unit, it is strongly recommended that you use your own personal computer and the supplied software for assignment work.

4c Unit website

<http://137.92.32.90:8080>

5: Assessment

5a Assessment overview

Assessment Item (including exams held in the exam period)	Due Date of Assignments	Weighting (total to equal 100%)
Assignment 1	5:00pm, Friday of Week 7	20%
Assignment 2	5:00pm, Friday of Week 15	20%
Examination	University examination period	60%

5b Details of each assessment item

Assignment 1: WIN32 Programming.

Assignment 2: Network Programming.

Final Examination: Open book, any materials are permitted.

Full details are available on the unit web site (see **4c**).

5c Special assessment requirements

The final assessment in the subject will result in one of the following grades: HD, DI, CR, P or Fail. Please note that PX grades are no longer available at UC.

total_mark = assignment_1_mark (out of 20) + assignment_2_mark (out of 20) + examination_mark (out of 60)

The grade for the subject is then determined according to the following rules:

Total mark (out of 100)	Exam mark (out of 60)	Final Grade
≥ 85	<i>and</i> ≥ 51	HD
≥ 75	<i>and</i> ≥ 45	DI
≥ 65	<i>and</i> ≥ 39	CR
≥ 50	<i>and</i> ≥ 30	P
< 50	<i>or</i> < 30	(NX, NS, NC or NN)

5d Supplementary assessment

There will be no supplementary test or exam.

Students who miss the final exam due to illness must provide a doctor's certificate, stating that the student was not able to sit for the exam, to the lecturer in charge as soon as possible - generally within 3 days of the examination

5e Text-matching software

No text-matching software will be used in this Unit.

6: Student Responsibility

6a Workload

The amount of time you will need to spend on study in this Unit will depend on a number of factors including your prior knowledge, learning skill level and learning style. Nevertheless, in planning your time commitments you should note that for a 3cp Unit the total notional workload over the fifteen-week semester is assumed to be 150 hours or an average of 10 hours per week. These hours include time spent in classes. The total workload for Units of different credit point value should vary proportionally. For example, for a 6cp Unit the total notional workload over a fifteen-week semester is assumed to be 300 hours or an average of 20 hours per week.

6b Special needs

Students who need assistance in undertaking the unit because of disability or other circumstances should inform their Unit Convener or the Disabilities Office as soon as possible so the necessary arrangements can be made.

6c Attendance requirements

Lecture attendance records will be kept. Students who do not attend regularly will almost certainly fail the final exam.

6d Required IT skills

See Section 2b

6e Costs

Textbooks, software and consumables. Information about the DETYA guidelines on student charges for HECS students can be found on OSIS.

6f Additional information

All assignments will require background reading, programming knowledge, keen observation and the development of a factual line of argument to support an adopted stance. It is also a requirement that each assignment is solely the work of the individual submitting it (unless explicitly stated otherwise) and that it is produced specifically for the subject in question. The reproduction, paraphrasing, summarizing or otherwise presenting in altered form, another person's ideas or arguments without acknowledgment is plagiarism. Plagiarism includes submitting work prepared by another author, including another student, as one's own. Any form of plagiarism will be reported to the Head of School for investigation.

7: Student Feedback

All students enrolled in this Unit will have an opportunity to provide anonymous feedback on the Unit at the end of the Semester via the Unit Satisfaction Survey which will be presented to you on OSIS. Your lecturer or tutor may also invite you to provide more detailed feedback through an anonymous questionnaire administered through the University's Centre for the Enhancement of Learning Teaching and Scholarship (CELTS).

8: Authority of this Unit Outline
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Any change to the information contained in Section 2 (Academic content), Section 3 (Delivery of Unit and timetable) and Section 5 (Assessment) of this document, will only be made by the Unit Convener if the written agreement of staff and a majority of students has been obtained; and if written advice of the change is then forwarded to each student enrolled in the Unit at their registered term address. Any individual student who believes him/herself to be disadvantaged by a change is encouraged to discuss the matter with the Unit Convener.