

**FIT2020**  
**Networks and data communications 2**

**Unit guide**

**Semester 1, 2009**

# Table of Contents

<u>FIT2020 Networks and data communications 2 - Semester 1, 2009</u> .....	1
<u>Unit leader</u> :.....	1
<u>Lecturer(s)</u> :.....	1
<u>Gippsland</u> .....	1
<u>Introduction</u> .....	1
<u>Unit synopsis</u> .....	1
<u>Learning outcomes</u> .....	1
<u>Workload</u> .....	1
<u>Unit relationships</u> .....	2
<u>Prerequisites</u> .....	2
<u>Relationships</u> .....	2
<u>Continuous improvement</u> .....	2
<u>Student Evaluations</u> .....	2
<u>Unit staff - contact details</u> .....	2
<u>Unit leader</u> .....	2
<u>Lecturer(s)</u> :.....	2
<u>Teaching and learning method</u> .....	3
<u>Communication, participation and feedback</u> .....	3
<u>Unit Schedule</u> .....	3
<u>Unit Resources</u> .....	3
<u>Prescribed text(s) and readings</u> .....	3
<u>Recommended text(s) and readings</u> .....	4
<u>Required software and/or hardware</u> .....	4
<u>Equipment and consumables required or provided</u> .....	4
<u>Study resources</u> .....	4
<u>Library access</u> .....	4
<u>Monash University Studies Online (MUSO)</u> .....	4
<u>Assessment</u> .....	5
<u>Unit assessment policy</u> .....	5
<u>Assignment tasks</u> .....	5
<u>Examinations</u> .....	6
<u>Assignment submission</u> .....	6
<u>Assignment coversheets</u> .....	6
<u>University and Faculty policy on assessment</u> .....	6
<u>Due dates and extensions</u> .....	6
<u>Late assignment</u> .....	6
<u>Return dates</u> .....	6
<u>Plagiarism, cheating and collusion</u> .....	7
<u>Register of counselling about plagiarism</u> .....	7
<u>Non-discriminatory language</u> .....	7
<u>Students with disabilities</u> .....	8
<u>Deferred assessment and special consideration</u> .....	8

# FIT2020 Networks and data communications 2 - Semester 1, 2009

## Unit leader :

Iqbal Gondal

## Lecturer(s) :

### Gippsland

- Iqbal Gondal

## Introduction

Welcome to FIT2020/GCO3824. This unit covers internetworking protocols and their use.

## Unit synopsis

FIT2020 Networks and Data Communications II will introduce students to advances in the distributed networked environment. The unit provides knowledge of internetworking protocols, QoS for critical applications, network management and TCP/IP operation. Access to the university's computer systems through an internet service provider is compulsory for distance education students.

## Learning outcomes

On completion of this unit students should be able to:

describe the ISO OSI reference model describe Internet protocol architecture analyse the main functions and design issues of the network layer describe the operation of IPv6 analyse the operation of TCP understand network security risks, requirements, and common security measures understand network management architecture understand common Internet applications including email, ftp, telnet and the WWW understand the basic concepts of multimedia communications and QoS

## Workload

For on campus students, workload commitments are:

- two-hour lecture and
- two-hour tutorial
- a minimum of 2-3 hours of personal study per one hour of contact time in order to satisfy the reading and assignment expectations.
- You will need to allocate up to 5 hours per week in some weeks, for use of a computer, including time for newsgroups/discussion groups.

Off-campus students generally do not attend lecture and tutorial sessions, however, you should plan to spend equivalent time working through the relevant resources and participating in discussion groups each week.

## Unit relationships

### Prerequisites

Before attempting this unit you must have satisfactorily completed

FIT1005

, or equivalent.

### Relationships

FIT2020 is a second unit in data communication and networks and this unit is not a prerequisite for any other unit.

### Continuous improvement

Monash is committed to 'Excellence in education' (Monash Directions 2025 - <http://www.monash.edu.au/about/monash-directions/directions.html>) and strives for the highest possible quality in teaching and learning.

To monitor how successful we are in providing quality teaching and learning Monash regularly seeks feedback from students, employers and staff. One of the key formal ways students have to provide feedback is through Unit Evaluation Surveys. The University's Unit Evaluation policy (<http://www.policy.monash.edu/policy-bank/academic/education/quality/unit-evaluation-policy.html>) requires that every unit offered is evaluated each year. Students are strongly encouraged to complete the surveys as they are an important avenue for students to "have their say". The feedback is anonymous and provides the Faculty with evidence of aspects that students are satisfied and areas for improvement.

Faculties have the option of administering the Unit Evaluation survey online through the my.monash portal or in class. Lecturers will inform students of the method being used for this unit towards the end of the semester.

## Student Evaluations

If you wish to view how previous students rated this unit, please go to <http://www.adm.monash.edu.au/cheq/evaluations/unit-evaluations/>

### Unit staff - contact details

#### Unit leader

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Senior Lecturer

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**Lecturer(s) :**

**Dr Iqbal Gondal**

Senior Lecturer

Phone +61 3 990 26669

## Teaching and learning method

For this unit, lectures, tutorials, lab exercises and on line discussion groups will be used for teaching.

## Communication, participation and feedback

Monash aims to provide a learning environment in which students receive a range of ongoing feedback throughout their studies. You will receive feedback on your work and progress in this unit. This may take the form of group feedback, individual feedback, peer feedback, self-comparison, verbal and written feedback, discussions (on line and in class) as well as more formal feedback related to assignment marks and grades. You are encouraged to draw on a variety of feedback to enhance your learning.

It is essential that you take action immediately if you realise that you have a problem that is affecting your study. Semesters are short, so we can help you best if you let us know as soon as problems arise. Regardless of whether the problem is related directly to your progress in the unit, if it is likely to interfere with your progress you should discuss it with your lecturer or a Community Service counsellor as soon as possible.

## Unit Schedule

Week	Topic	Key dates
1	Concepts of Protocols and Layered Architecture	03/03/2009
2	Network Layer Functions and Design Issues	10/03/2009
3	Internetworking	17/03/2009
4	The Internet and Routing Protocols	24/03/2009
5	IP Version 6 (IPv6) or IP New Generation (IPNG)	31/03/2009
6	Transport Services and Mechanisms	07/04/2009
Mid semester break		
7	Transport Protocol of the Internet TCP and UDP	21/04/2009
8	Network Security 1	28/04/2009
9	Network Security 2	5/5/2009
10	Network Management and Internet Applications 1	12/5/2009
11	Internet Applications 2	19/5/2009
12	Multimedia Communications	26/5/2009
13	Revision	2/6/2009

## Unit Resources

### Prescribed text(s) and readings

William Stallings, *Data Communications and Networking*, Prentice Hall, 8th Edition, 2007

OPNET lab manual to accompany

Data and Computer Communications, Kevin Brown, Publisher: Prentice Hall, 2004, 0-13-148252-1

Text books are available from the [Monash University Book Shops](#). Availability from other suppliers cannot be assured. The Bookshop orders texts in specifically for this unit. You are advised to purchase your text book early.

## Recommended text(s) and readings

William Stallings, *Data Communications and Networking*, Prentice Hall, 8th Edition, 2007

## Required software and/or hardware

OPNET software trial version from OPNET.COM (Free for teaching and learning purposes)

## Equipment and consumables required or provided

Students studying off-campus are required to have the minimum system configuration specified by the Faculty as a condition of accepting admission, and regular Internet access. On-campus students, and those studying at supported study locations may use the facilities available in the computing labs. Information about computer use for students is available from the ITS Student Resource Guide in the Monash University Handbook. You will need to allocate up to 3 hours per week for use of a computer, including time for newsgroups/discussion groups.

## Study resources

Study resources we will provide for your study are:

Online Unit Book with 12 study guides, MUSO website, where discussion groups will be moderated by the lecturer

## Library access

The Monash University Library site contains details about borrowing rights and catalogue searching. To learn more about the library and the various resources available, please go to <http://www.lib.monash.edu.au>.

The Educational Library and Media Resources (LMR) is also a very resourceful place to visit at <http://www.education.monash.edu.au/library/>

## Monash University Studies Online (MUSO)

All unit and lecture materials are available through MUSO (Monash University Studies Online). Blackboard is the primary application used to deliver your unit resources. Some units will be piloted in Moodle. If your unit is piloted in Moodle, you will see a link from your Blackboard unit to Moodle (<http://moodle.monash.edu.au>) and can bookmark this link to access directly. In Moodle, from the Faculty of Information Technology category, click on the link for your unit.

You can access MUSO and Blackboard via the portal: <http://my.monash.edu.au>

Click on the Study and enrolment tab, then Blackboard under the MUSO learning systems.

In order for your Blackboard unit(s) to function correctly, your computer needs to be correctly configured.

For example:

- Blackboard supported browser
- Supported Java runtime environment

For more information, please visit: <http://www.monash.edu.au/muso/support/students/downloadables-student.html>

You can contact the MUSO Support by phone : (+61 3) 9903 1268

For further contact information including operational hours, please visit:  
<http://www.monash.edu.au/muso/support/students/contact.html>

Further information can be obtained from the MUSO support site:  
<http://www.monash.edu.au/muso/support/index.html>

## Assessment

### Unit assessment policy

To pass this unit, a student must obtain :

- 40% or more in the unit's examination and
- 40% or more in the unit's total non-examination assessment  
and
- an overall unit mark of 50% or more

If a student does not achieve 40% or more in the unit examination or the unit non-examination total assessment, and the total mark for the unit is greater than 44% then a mark of 44-N will be recorded for the unit.

### Assignment tasks

#### • Assignment Task

**Title :** Assignment 1

**Description :**

This assignment will test concepts of layers, internetworking and routing.

**Weighting :** 15%

**Criteria for assessment :**

Student should demonstrate skills in OSI model, internetworking and routing schemes.

**Due date :** 12th April 2009

#### • Assignment Task

**Title :** Assignment 2

**Description :**

This assignment will test concepts of routing protocols, transport layer, security, network management, QoS and application layer. This assignment will also require students to do lab work and include results to support their answers.

**Weighting :** 25%

**Criteria for assessment :**

Students should demonstrate skills in routing protocols, transport layer, security, network management and application layer.

**Due date** : 11th May 2009

## Examinations

- **Examination 1**

**Weighting** : 60%

**Length** : 3 hours

**Type ( open/closed book )** : Closed book

## Assignment submission

Assignments will be submitted by **electronic** submission at my.monash.edu.au in assignment section of the website

## Assignment coversheets

Coversheet can be found via Blackboard, in **Assignments, quizzes, tests, exam prep** section of the website.

## University and Faculty policy on assessment

## Due dates and extensions

The due dates for the submission of assignments are given in the previous section. Please make every effort to submit work by the due dates. It is your responsibility to structure your study program around assignment deadlines, family, work and other commitments. Factors such as normal work pressures, vacations, etc. are seldom regarded as appropriate reasons for granting extensions. Students are advised to NOT assume that granting of an extension is a matter of course.

There will be no assignment extensions, after cutoff date assignments will not be accepted.

## Late assignment

Assignments received after the due date will be subject to a penalty or will not be accepted

## Return dates

Students can expect assignments to be returned within two weeks of the submission date or after receipt, whichever is later.

Assessment for the unit as a whole is in accordance with the provisions of the Monash University Education Policy at <http://www.policy.monash.edu/policy-bank/academic/education/assessment/>

We will aim to have assignment results made available to you within two weeks after assignment receipt.



## Plagiarism, cheating and collusion

Plagiarism and cheating are regarded as very serious offences. In cases where cheating has been confirmed, students have been severely penalised, from losing all marks for an assignment, to facing disciplinary action at the Faculty level. While we would wish that all our students adhere to sound ethical conduct and honesty, I will ask you to acquaint yourself with the University Plagiarism policy and procedure (<http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-procedures.html>) which applies to students detected plagiarising.

In this University, cheating means seeking to obtain an unfair advantage in any examination or any other written or practical work to be submitted or completed by a student for assessment. It includes the use, or attempted use, of any means to gain an unfair advantage for any assessable work in the unit, where the means is contrary to the instructions for such work.

When you submit an individual assessment item, such as a program, a report, an essay, assignment or other piece of work, under your name you are understood to be stating that this is your own work. If a submission is identical with, or similar to, someone else's work, an assumption of cheating may arise. If you are planning on working with another student, it is acceptable to undertake research together, and discuss problems, but it is not acceptable to jointly develop or share solutions unless this is specified by your lecturer.

Intentionally providing students with your solutions to assignments is classified as "assisting to cheat" and students who do this may be subject to disciplinary action. You should take reasonable care that your solution is not accidentally or deliberately obtained by other students. For example, do not leave copies of your work in progress on the hard drives of shared computers, and do not show your work to other students. If you believe this may have happened, please be sure to contact your lecturer as soon as possible.

Cheating also includes taking into an examination any material contrary to the regulations, including any bilingual dictionary, whether or not with the intention of using it to obtain an advantage.

Plagiarism involves the false representation of another person's ideas, or findings, as your own by either copying material or paraphrasing without citing sources. It is both professional and ethical to reference clearly the ideas and information that you have used from another writer. If the source is not identified, then you have plagiarised work of the other author. Plagiarism is a form of dishonesty that is insulting to the reader and grossly unfair to your student colleagues.

## Register of counselling about plagiarism

The university requires faculties to keep a simple and confidential register to record counselling to students about plagiarism (e.g. warnings). The register is accessible to Associate Deans Teaching (or nominees) and, where requested, students concerned have access to their own details in the register. The register is to serve as a record of counselling about the nature of plagiarism, not as a record of allegations; and no provision of appeals in relation to the register is necessary or applicable.

## Non-discriminatory language

The Faculty of Information Technology is committed to the use of non-discriminatory language in all forms of communication. Discriminatory language is that which refers in abusive terms to gender, race, age, sexual orientation, citizenship or nationality, ethnic or language background, physical or mental ability, or political or religious views, or which stereotypes groups in an adverse manner. This is not meant to preclude or inhibit legitimate academic debate on any issue; however, the language used in such debate should be non-discriminatory and sensitive to these matters. It is important to avoid the use of discriminatory language in your communications and written work. The most common form of discriminatory language in academic work tends to be in the area of gender inclusiveness. You are, therefore, requested to check for this and to ensure your work and communications

are non-discriminatory in all respects.

## **Students with disabilities**

Students with disabilities that may disadvantage them in assessment should seek advice from one of the following before completing assessment tasks and examinations:

- Faculty of Information Technology Student Service staff, and / or
- your Unit Coordinator, or
- Disabilities Liaison Unit

## **Deferred assessment and special consideration**

Deferred assessment (not to be confused with an extension for submission of an assignment) may be granted in cases of extenuating personal circumstances such as serious personal illness or bereavement. Information and forms for Special Consideration and deferred assessment applications are available at <http://www.monash.edu.au/exams/special-consideration.html>. Contact the Faculty's Student Services staff at your campus for further information and advice.