MONASH University

FIT9020
Data communications

Unit Guide

Semester 2, 2009

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FIT9020 Data communications - Semester 2, 2009

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Introduction

Welcome to FIT 9020 Data Communication for semester 2, 2009. This 6 point unit is core to those students undertaking MIT and MAIT degrees that have not had prior exposure to Data Communications and Networking. The unit has been designed to provide you with good understanding of technical sides of working of Local area Networks on one side and the Internet on the other.

Unit synopsis

The unit will introduce students to fundamentals of data and computer communications method and techniques. It covers: ISO and TCP/IP layered protocols; physical layer concepts: data transmission methods, signal encoding and digital data communication techniques; data link control protocol, multiplexing methods; WAN and LAN networking fundamentals; internetworking and transport protocols.

Learning outcomes

At the completion of this unit, students should be able to:

1. Understand layered ISO and TCP/IP protocols
2. Have knowledge of data transmission technology, signal encoding techniques and data link control protocols
3. Understand multiplexing methods and technologies
4. Understand the functions and architectures of LAN and WAN.

Contact hours

2 hours of lectures/week, 2 hours of tutorials and laboratories/week

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.

Unit relationships

Prerequisites

FIT9018

Prohibitions

CSE9801, BUS3150, CSE2318, CSE3318, FIT1005

Relationships

FIT9020 is an unit in the data communications specialisation of the MIT and MAIT degrees.

You may not study this unit and

ECE4411 ECE5411 CSE4881 CSE4882 ECE4044 FIT4015 in your degree.

Teaching and learning method

Lectures will provide students with theory and demonstrations of the discussed concepts.

Tutorials will be used to study the practical aspects of the material presented in lectures.

Timetable information

For information on timetabling for on-campus classes please refer to MUTTS, http://mutts.monash.edu.au/MUTTS/

Tutorial allocation

On-campus students should register for tutorials/laboratories using the Allocate+ system:
http://allocate.cc.monash.edu.au/

Unit Schedule

Week	Topic	Key dates
1	Introduction to data communications	
2	Application Layer	
3	Physical layer	
4	Data Link Layer	
5	Network and Transport Layers - part 1	
6	Network and Transport Layers - part 2	
7	Local area network	
8	Wireless Local Area Networks	
9	Metropolitan and wide area networks	
10	Backbones networks	
Mid semester break		
11	The Internet	
12	Network design	
13	Revision	

Unit Resources

Prescribed text(s) and readings

Jerry FitzGerald, Alan Dennis, *Business Data Communications and Networking,* Willey, 10th Edition, 2009

Recommended text(s) and readings

W. Stallings, *Data and Computer Communications,*8th ed., 2008, Pearson

Required software and/or hardware

Wireshark. Packet Analysis Software

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 **8** 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:

- Weekly detailed lecture notes outlining the learning objectives, discussion of the content, required readings and exercises;
- Weekly tutorial/laboratory tasks and exercises with sample solutions provided one to two weeks later;
- Sample class tests and suggested solutios
- Discussion groups;
- This Unit Guide outlining the administrative information for the unit;
- The unit web site on Moodle, where resources outlined above will be made available.

Assessment

Overview

Assignments: 40%; Exam (3hrs): 60%

Faculty assessment policy

To pass a unit which includes an examination as part of the assessment 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 no greater than 44-N will be recorded for the unit.

To pass this unit a student must obtain an overall unit mark of 50% or more

Assignment tasks

Assignment coversheets

Assignment coversheets are available via "Student Forms" on the Faculty website:
http://www.infotech.monash.edu.au/resources/student/forms/
You MUST submit a completed coversheet with all assignments, ensuring that the plagiarism declaration section is signed.

Assignment submission and return procedures, and assessment criteria will be specified with each assignment.

- **Assignment task 1**

  Title:
  Assignment1
  Description:
  Assignment 1 will include the material covered in weeks 1-5. In particular questions will be related to: components of networks, type of networks, internet models, message transmission using layers, application layer architectures, physical and data link layers.
  Weighting:
  20%
  Due date:
  week 6

- **Assignment task 2**

  Title:
  Assignment 2
  Description:
  Assignment 2 will include the material covered in weeks 6-10. In particular, the questions will be related to network and transport layers, structures and functions of local area, backbone and wide area networks.

Weighting:
20%
Due date:
week 10

Examination

- **Weighting:** 60%
  Length: 3 hours
  Type (open/closed book): Closed book

See Appendix for End of semester special consideration / deferred exams process.

Due dates and extensions

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 not regarded as appropriate reasons for granting extensions. Students are advised to NOT assume that granting of an extension is a matter of course.

Students requesting an extension for any assessment during semester (eg. Assignments, tests or presentations) are required to submit a Special Consideration application form (in-semester exam/assessment task), along with original copies of supporting documentation, directly to their lecturer within two working days before the assessment submission deadline. Lecturers will provide specific outcomes directly to students via email within 2 working days. The lecturer reserves the right to refuse late applications.

A copy of the email or other written communication of an extension must be attached to the assignment submission.

Refer to the Faculty Special consideration webpage or further details and to access application forms:
http://www.infotech.monash.edu.au/resources/student/equity/special-consideration.html

Late assignment

Assignments received after the due date will be subject to a penalty of **5% per day. Assignments received later than one week after the due date will not normally be accepted.**

Return dates

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

Appendix

Please visit the following URL: http://www.infotech.monash.edu.au/units/appendix.html for further information about:

- Continuous improvement
- Unit evaluations
- Communication, participation and feedback
- Library access
- Monash University Studies Online (MUSO)
- Plagiarism, cheating and collusion
- Register of counselling about plagiarism
- Non-discriminatory language
- Students with disability
- End of semester special consideration / deferred exams