



MONASH University

FIT5083
Wireless networks

Unit Guide

Semester 2, 2009

The information contained in this unit guide is correct at time of publication. The University has the right to change any of the elements contained in this document at any time.

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FIT5083 Wireless networks - Semester 2, 2009

Chief Examiner:

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Lecturer(s) / Leader(s):

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Introduction

Welcome to FIT5083, this unit presents concepts of wireless networks and communication technologies.

Unit synopsis

This unit will cover wireless network technologies as well as fundamental data communication and network issues. Main topics will include: wireless communication technology, Antenna and propagation for wireless systems, wireless networking, spread spectrum, cordless system, WiMax, Wi-Fi and IEEE 802.11 WLAN standards, wireless local area networks, wireless applications, mobile IP, WAP, Blue tooth and IEEE802.15. Unit will also cover advanced topics in wireless communications.

Learning outcomes

At the completion of this unit students will be able to:

1. describe the basic characteristics of OSI model and digital mobile systems;
2. understand architecture and signal characteristics of cellular communication systems;
3. understand wireless technologies for signal encoding, spread spectrum and error control;
4. understand architectures of cordless, wireless local loop and mobile IP systems;
5. apply wireless local area network and bluetooth standards;
6. analyse advanced topics in communications.

Contact hours

2 hours of lectures/week; 2 hours of tutorials/week.

Workload

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

For MAIT students, [FIT9017](#), [FIT9018](#), [FIT9019](#), [FIT9030](#), [FIT9020](#) and [FIT4037](#). Recommended knowledge: fundamental knowledge of computer and communication systems.

Prohibitions

CPE4002, CSE4881, CSE4882, GCO4824.

Relationships

FIT5083 is an elective unit for master's programs.

You may not study this unit and

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CPE4002, CSE4881, CSE4882, Translation set GCO4824

in your degree.

Teaching and learning method

Teaching material (except text book) will be made available from the my.monash.edu.au website.

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	Concepts of protocols and Wireless networks	20/07/2009
2	Communication networks	27/07/2009
3	Transport protocol and services â TCP /IP and UDP	03/08/2009
4	Wireless Network Architecture	10/08/2009
5	Wireless Signal	17/08/2009
6	Singal Encoding and Spread spectrum	24/8/2009
7	Coding and error control in Wireless systems	31/8/2009
8	Cordless systems and wireless local loop	7/9/2009
9	Mobile IP-based Network and Wireless Application Protocol (WAP)	14/9/2009
10	Wireless LAN Technology	21/9/2009
Mid semester break		
11	Bluetooth	5/10/2009
12	Advance topics: Multimedia communications	12/10/2009
13	Revision	19/10/2009

Unit Resources

Prescribed text(s) and readings

William Stallings and Wireless Communications and Networks, second edition, Publisher: Prentice Hall. Unit book, on-line reading and research articles on networks

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 and Wireless Communications and Networks, second edition, Publisher: Prentice Hall. Unit book, on-line reading and research articles on networks

Required software and/or hardware

No software is required

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:

my.monash.edu.au unit website, will have unit book, lecture notes, tutorial questions and assignments

Assessment

Overview

Assignment/Lab: 40%; Exam Central - closed book (3 hours): 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.

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:

Assignment 1

Description:

This assignment will test concepts of layers, TCP/IP, wireless communications.

Weighting:

20%

Due date:

17th August 2009

• Assignment task 2

Title:

Assignment 2

Description:

This assignment will test concepts of wireless technologies, applications and WLAN.

Weighting:

20%

Due date:

5th October 2009

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, including weekends. Assignments received later than one week (seven days) after the due date will not normally be accepted. In some cases, this period may be shorter if there is a need to release sample solutions.

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