

FIT9135
Data communications

Unit Guide

Semester 2, 2015

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Last updated: 16 Jul 2015

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FIT9135 Data communications - Semester 2, 2015

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.

Mode of Delivery

Caulfield (Day)

Workload Requirements

Minimum total expected workload equals 12 hours per week comprising:

(a.) Contact hours for on-campus students:

- Two hours of lectures
- One 2-hour laboratory

(b.) Additional requirements (all students):

- A minimum of 8 hours independent study per week for completing lab and project work, private study and revision.

See also Unit timetable information

Unit Relationships

Prohibitions

FIT9020, FIT5135

Chief Examiner

Dr Guido Tack

Campus Lecturer

Caulfield

Guido Tack

Your feedback to Us

Monash is committed to excellence in education and regularly seeks feedback from students, employers and staff. One of the key formal ways students have to provide feedback is through the Student Evaluation of Teaching and Units (SETU) survey. The University's student evaluation policy requires that

every unit is evaluated each year. Students are strongly encouraged to complete the surveys. The feedback is anonymous and provides the Faculty with evidence of aspects that students are satisfied and areas for improvement.

For more information on Monash's educational strategy, see:

www.monash.edu.au/about/monash-directions/ and on student evaluations, see:
www.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html

Previous Student Evaluations of this Unit

Based on previous student feedback this unit is well structured and no changes have been made for this semester.

If you wish to view how previous students rated this unit, please go to
<https://emuapps.monash.edu.au/unitevaluations/index.jsp>

Academic Overview

Learning Outcomes

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

- describe the underlying fundamental theories and models of transmitting data across a communication channel;
- identify and describe the concepts and theories of standard network protocols;
- describe the functions and architectures of LAN and WAN;
- evaluate several different design options and formulate a simple network design.

Unit Schedule

Week	Activities	Assessment
0		No formal assessment or activities are undertaken in week 0
1	Introduction to Data Communications	
2	Application Layer	Weekly Pre-lecture Online Quizzes (Weeks 2 to 11). Weekly Peer Instruction Participation in Lecture Sessions (Weeks 2 to 11)
3	Physical Layer	
4	Data Link Layer	
5	Network and Transport Layers - Part 1	
6	Network and Transport Layers - Part 2	
7	Local Area Networks	Assignment 1 due 13 September 2015
8	Wireless Local Area Networks	
9	Metropolitan, Wide Area and Backbone Networks	
10	Network Security	
11	The Internet	Assignment 2 due 18 October 2015
12	Review	
	SWOT VAC	No formal assessment is undertaken during SWOT VAC
	Examination period	LINK to Assessment Policy: http://policy.monash.edu.au/policy-bank/academic/education/assessment/assessment-in-coursework-policy.html

*Unit Schedule details will be maintained and communicated to you via your learning system.

Teaching Approach

Lecture and tutorials or problem classes

This teaching and learning approach helps students to initially encounter information at lectures, discuss and explore the information during tutorials, and practice in a hands-on lab environment.

Assessment Summary

Examination (3 hours): 50%; In-semester assessment: 50%

Assessment Task	Value	Due Date
Pre-lecture Online Quizzes	5%	Weekly (Weeks 2 to 11). The exact due date will be announced as Moodle's quiz notification
Peer Instruction Participation in Lecture Sessions	5%	Weekly Lecture Sessions (Weeks 2 to 11)

Unit Schedule

Assignment 1	20%	13 September 2015
Assignment 2	20%	18 October 2015
Examination 1	50%	To be advised

Assessment Requirements

Assessment Policy

Faculty Policy - Unit Assessment Hurdles

(<http://intranet.monash.edu.au/infotech/resources/staff/edgov/policies/assessment-examinations/assessment-hurdles>)

Academic Integrity - Please see resources and tutorials at

<http://www.monash.edu/library/skills/resources/tutorials/academic-integrity/>

Assessment Tasks

Participation

- **Assessment task 1**

Title:

Pre-lecture Online Quizzes

Description:

Learning outcomes: 1, 2, 3. Students will be asked to complete online quizzes in Moodle based on the prescribed reading of the week.

Weighting:

5%

Criteria for assessment:

The average marks across a number of quizzes from Weeks 2 to 11.

Due date:

Weekly (Weeks 2 to 11). The exact due date will be announced as Moodle's quiz notification

- **Assessment task 2**

Title:

Peer Instruction Participation in Lecture Sessions

Description:

Learning outcomes: 1, 2, 3. Student participation through the response gathering system will be recorded.

Weighting:

5%

Criteria for assessment:

The average mark across all lectures from Weeks 2 to 11. Student answers during the peer instruction session will not be graded based on correctly answering questions. The grade will be based on participation. Marks for a lecture will be awarded based on how many of the questions presented in the lecture are answered.

Due date:

Weekly Lecture Sessions (Weeks 2 to 11)

- **Assessment task 3**

Title:

Assignment 1

Description:

Assessment Requirements

Learning outcomes: 1,2.

Assignment 1 will include the material covered in Weeks 1 to 5. In particular, the assignment will consist of questions related to components of networks, types of networks, internet models, message transmission using layers, application layer architectures, physical and data link layers. The format of the student submission will be a written report.

Weighting:

20%

Criteria for assessment:

The criteria used to assess submissions are:

- ◆ Correctness and understanding - there may be more than one "right" answer in many cases.
- ◆ Completeness - that you have answered all parts of each question.
- ◆ Presentation - that you have presented your answers using the appropriate method.
- ◆ Use of evidence and argument - you are able to explain your position by using logical argument.

Due date:

13 September 2015

• **Assessment task 4**

Title:

Assignment 2

Description:

Learning outcomes: 3, 4.

Assignment 2 will include the material covered in Weeks 6 to 10. In particular, the assignment will consist of questions related to network and transport layers, structures and functions of local area, backbone and wide area networks. The format of the student submission will be a written report.

Weighting:

20%

Criteria for assessment:

The criteria used to assess submissions are:

- ◆ Correctness and understanding - there may be more than one "right" answer in many cases.
- ◆ Completeness - that you have answered all parts of each question.
- ◆ Presentation - that you have presented your answers using the appropriate method.
- ◆ Use of evidence and argument - you are able to explain your position by using logical argument.

Due date:

18 October 2015

Examinations

• Examination 1

Weighting:

50%

Length:

3 hours

Type (open/closed book):

Closed book

Electronic devices allowed in the exam:

None

Learning resources

Monash Library Unit Reading List (if applicable to the unit)

<http://readinglists.lib.monash.edu/index.html>

Feedback to you

Types of feedback you can expect to receive in this unit are:

- Informal feedback on progress in labs/tutes
- Graded assignments with comments
- Quiz results

Extensions and penalties

Submission must be made by the due date otherwise penalties will be enforced.

You must negotiate any extensions formally with your campus unit leader via the in-semester special consideration process: <http://www.monash.edu.au/exams/special-consideration.html>

Returning assignments

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

Assignment submission

It is a University requirement

<http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-academic-integrity-managing-pla> for students to submit an assignment coversheet for each assessment item. Faculty Assignment coversheets can be found at <http://www.infotech.monash.edu.au/resources/student/forms/>. Please check with your Lecturer on the submission method for your assignment coversheet (e.g. attach a file to the online assignment submission, hand-in a hard copy, or use an electronic submission). Please note that it is your responsibility to retain copies of your assessments.

Online submission

If Electronic Submission has been approved for your unit, please submit your work via the learning system for this unit, which you can access via links in the my.monash portal.

Required Resources

Please check with your lecturer before purchasing any Required Resources. Limited copies of prescribed texts are available for you to borrow in the library, and prescribed software is available in student labs.

Wireshark, Packet Analysis Software freely available from <http://www.wireshark.org/>

Prescribed text(s)

Limited copies of prescribed texts are available for you to borrow in the library.

Jerry FitzGerald and Alan Dennis. (2012 or 2014). *Business Data Communications & Networking*. (11th or 12th Edition) Wiley.

Additional subject costs

On-campus students are required to purchase a Turning Point clicker from the Campus Bookstore or directly from the Australian Distributor.

Other Information

Policies

Monash has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University's academic standards, and to provide advice on how they might uphold them. You can find Monash's Education Policies at:

www.policy.monash.edu.au/policy-bank/academic/education/index.html

Faculty resources and policies

Important student resources including Faculty policies are located at

<http://intranet.monash.edu.au/infotech/resources/students/>

Graduate Attributes Policy

<http://www.policy.monash.edu/policy-bank/academic/education/management/monash-graduate-attributes-policy.h>

Student Charter

www.opq.monash.edu.au/ep/student-charter/monash-university-student-charter.html

Student services

The University provides many different kinds of support services for you. Contact your tutor if you need advice and see the range of services available at <http://www.monash.edu.au/students>. For Malaysia see <http://www.monash.edu.my/Student-services>, and for South Africa see <http://www.monash.ac.za/current/>.

Monash University Library

The Monash University Library provides a range of services, resources and programs that enable you to save time and be more effective in your learning and research. Go to www.lib.monash.edu.au or the library tab in [my.monash](#) portal for more information. At Malaysia, visit the Library and Learning Commons at <http://www.lib.monash.edu.my/>. At South Africa visit <http://www.lib.monash.ac.za/>.

Disability Liaison Unit

Students who have a disability or medical condition are welcome to contact the Disability Liaison Unit to discuss academic support services. Disability Liaison Officers (DLOs) visit all Victorian campuses on a regular basis.

- Website: <http://www.monash.edu/equity-diversity/disability/index.html>
- Telephone: 03 9905 5704 to book an appointment with a DLO; or contact the Student Advisor, Student Community Services at 03 55146018 at Malaysia
- Email: dlu@monash.edu
- Drop In: Equity and Diversity Centre, Level 1, Building 55, Clayton Campus, or Student Community Services Department, Level 2, Building 2, Monash University, Malaysia Campus