

Data Communications

WELCOME TO DATA COMMUNICATIONS

Macquarie University

Data communications



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NETWORKS, PROCESSES, TYPES OF DATA, AND MORE



What will you be doing in this unit?

DETAILS ABOUT LECTURES, WORKSHOPS, SUBMISSIONS, AND CONCEPTS

Learning outcomes

WHERE WE WANT YOU TO BE AT BY THE END OF THE UNIT

ULO1: Explain the importance and the **role of network protocols** including why they are organised into protocol stacks and how protocol stacks function.

ULO2: Demonstrate an **understanding of IP addressing, routing and subnetting** by for example computing routing outcomes and determining effective and actual IP addresses.

ULO3: **Differentiate among LAN components**, and describe and, in particular instances calculate, how **MAC addresses, address resolution and the ethernet protocol interact**.

ULO4: **Evaluate different network designs** based on an awareness of different major network technologies including wireless, backbone, wide area networks, and the Internet

ULO5: **Demonstrate technical networking proficiency** including ability to configure, construct, and document, and in simple cases, design networks, as well as the ability to perform traffic analysis on local area networks.

ULO6: Develop plans for **dealing with network security and management**.

Assessments



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PACE YOURSELF - THIS UNIT IS CONTENT HEAVY

Assessment Name	Weight	Due Date	Hurdle Requirement	Submission Method	Return Date	Learning Outcomes
Weekly Practicals	20%	Weekly, before the end of your practical class	Yes *	iLearn submission box	Marks: End of the following week. Cohort feedback: discussed in the lecture of the following week.	ULO1 ULO2 ULO3 ULO5
Module Exams	40%	Modules 1 and 2: during week 7 practical class. Modules 3 and 4: during the formal exam period.	None	iLearn quiz	Total Mark: Two weeks following the end of the module exams. Feedback: A week after marks have been released.	ULO1 ULO2 ULO3 ULO4 ULO6
Assignment 1	20%	Sunday, 13/04/2025 11:55pm (Sunday after week 07)	None	iLearn Assignment submission box	27/04/2025	ULO1 ULO2 ULO3
Assignment 2	20%	Sunday, 1/06/2025 11:55pm (The Sunday at the end of week 12)	None	iLearn Assignment submission box	15/06/2025	ULO2 ULO3 ULO4 ULO6

COMP6250 iLearn page



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LECTURES, WORKSHOPS, TASKS, AND... SHOES?!?

- > Week 01 - Network Fundamentals and LANs
- > Week 02 - OSI Layer 3 - Network Layer + Subnetting
- > Week 03 - Subnetting + OSI Layers 5 through 7
- > Week 04 - OSI Layer 4 - Transport Layer
- > Week 05 - OSI Layer 1 - Physical Layer
- > Week 06 - OSI Layer 2 - Data Link Layer
- > Week 07 - Wireless Networks + Mid-Semester Module Exams
- > Week 08 - 'Layer 8' - Security, Ethics, and GRC
- > Week 09 - 'Layer 8' - Project Management
- > Week 10 - Backbone Networks
- > Week 11 - MANs and WANs
- > Week 12 - The Internet
- > Week 13 - Revision

Active Learning Platform



Launch Active Learning Platform

Having trouble accessing Echo360?
Click here for information on updating
Safari.



Abridged Unit Schedule

A FEW THINGS TO NOTE (PRACS, ASSESSMENTS, EXAM)

Tentative teaching schedule, subject to change:				
Week	Lecture Topics	Reading	Workshop	Assessment Notes and Public Holidays
0	"Kickstart" week			
1	Introduction, LANs	Ch 1 & 7	Take-home reading and quiz	
2	OSI Layer 3, Subnetting	Ch 5	Wireshark Introduction	Last enrol date (Sunday, Mar 9)
3	Subnetting Layers, 5, 6, and 7	Ch 5	IP Headers	
4	OSI Layer 4	Ch 5 & 2	Subnetting	Census date (Friday, Mar 21)
5	OSI Layer 1	Ch 3	TCP and FTP	
6	OSI Layer 2	Ch 4	TBD	
7	Wireless	Ch 7	In-class Module Exam	Assignment 1 due end of this week
	Mid-Semester			
	Teaching Break			
8	"Layer 8" - Ethics, Privacy	Ch 11	WiFi	
9	"Layer 8" - PM	Ch 11	Switches, MAC, and ARP	
10	Security Controls	Ch 11	NAT	
11	Backbones	Ch 8	Single Switch VLANs	
12	WANs	Ch 9	VLAN Trunking	Assignment 2 due end of this week
13	"The Internet"	Ch 10	RIP	
Final Exams				Final Module Exam

Practical Reports (from week 2)



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EACH PRACTICAL HAS A SUBMISSION DUE AT THE END!

- Complete the lecture quiz for the week prior to the practical class.
 - You can take this quiz as many times as you'd like
 - You must get 100% in this quiz to **enable** the practical submission box
- Read the practical worksheet **before** attending your class.
- Practical work must be conducted **during** class time
- Your report is a record of what **you** achieved during the practical class
 - If you don't finish everything, just submit what you've managed to complete
- Your report **must** be submitted before the class ends
- Aim to have your report ready to submit **at least** 10 minutes before the end

Remember to wear enclosed shoes...
your classes are in specialty labs with
extra WH&S requirements.

Teaching assistants can refuse you entry
if you don't have the correct footwear.



Assignments

ASSIGNMENTS 1 AND 2

- Both assignments will require you to do some research and thinking about how the various components of the unit work together.
- All submission are done via iLearn.
- Work will be assessed in accordance with Macquarie University's student code of conduct and the university assessment policies and procedures.

Module Exams

WE'VE PARTITIONED THE UNIT INTO 4 MODULES

The first two modules include will be assessed during the mid-semester exam:

- week 1 - 5 lecture concepts, and
- week 1 - 6 practical concepts (*)

The final two modules will be assessed during the final exam:

- week 6 - 13 lectures, and
- week 8 - 13 practical concepts (*)

(*) Note that the exams will **not** require you to know which button to push or command to run from the lab software and equipment

The mid-semester exam will will be during the semester in your practical class. The module exams are LOCKED to your enrolment from eStudent. So you need to attend the class you are enrolled in.

Any questions at this point?

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COMP2250 Communications

(Some favours to ask)

WE HAVE OVER 900 STUDENTS - AND ONLY TWO LECTURERS


Got a question? Ask!!


BUT FIRST...


Check if your question has already been answered...

- If your question is already answered, you might get a curt response pointing you at the relevant iLearn forum post / announcement.
- Do not email the teaching staff, use the provided forums


Public Forums

 Announcements

 General Discussion Forum - for asking the lecturers questions

 Prac swap forum - open until end of week 4

Private Forums

 Important Private Messages to Primary Unit Contacts (your posts are not visible to your peers)

This channel is for all communication with the primary teaching staff in COMP2250.

Misadventure?

WHAT TO DO

If you are sick or otherwise unable to complete an assessment by the due date because of some external factor / misadventure, apply for special consideration via the AskMQ site <https://ask.mq.edu.au/>

Be prompt... you should submit the application for Special Consideration no later than 5 working days after the assessment due date.

Full policy and procedures are at
<https://students.mq.edu.au/study/my-study-program/special-consideration>

Any questions at this point?

IF NOT, WE'LL MOVE ON TO THE LECTURE CONTENT FOR THIS WEEK

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