



COMP6260

Cisco Networking I

Session 1, In person-scheduled-weekday, North Ryde 2022

School of Computing

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General Information

Unit convenor and teaching staff

Convenor and Lecturer

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Lecturer

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Credit points

10

Prerequisites

COMP6250 or ITEC647

Corequisites

Co-badged status

Comp3260

Unit description

This unit is designed to impart practical skills in designing, configuring, installing, and troubleshooting computer internetworks using equipment such as routers and switches. This unit allows students to develop knowledge and expertise in key areas such as IP fundamentals, LAN Switching, IP addressing, and routing. It allows students to expand their skill set by providing exposure to Cisco equipment thereby enabling them to better understand the design and implementation of various networking technologies and protocols. Using various assessment tasks, this unit also aims to enhance students' skills in critical thinking and problem solving.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

Learning Outcomes

On successful completion of this unit, you will be able to:

ULO1: Develop an understanding of networking fundamentals.

ULO2: Understand, build, configure and troubleshoot switched Ethernet LANs and

Virtual LANs.

ULO3: Explain IP addressing schemes and troubleshoot IPv4 address problems.

ULO4: Demonstrate a detailed knowledge of IPv4 routing technology and implement and troubleshoot IPv4 routed network.

ULO5: Collaborate and communicate with others in a professional setting.

ULO6: Conduct professional work ethically with a high level of integrity, autonomy, and accountability.

General Assessment Information

Submission of assessable work

For all your assignments, and for your professional life in the future, you are encouraged to

- set your personal deadline earlier than the official deadline
- keep backups of all your important files
- make sure that no-one else has access to your files or documents

Assignments

Assignment work must be written clearly, with good grammar, correct word usage, correct punctuation, and lack of spelling errors. Poor or bad expression will be penalized. Wherever required, all written work must be properly referenced and conform to standard stylistic conventions.

Practicals

Note that while the practical material is structured against the lecture material, you need to keep in mind that there will not always be a one to one mapping between the practical exercises and the lecture topics. This is because you need some practical sessions to get acquainted to new tools and devices thereby limiting the number of practical time slots available to experiment with technologies discussed in some lectures.

Late Submissions

Late submissions will not be accepted without an approved Special Consideration request. Assessments submitted after the due date will receive a mark of zero.

Assessment Tasks

Name	Weighting	Hurdle	Due
Weekly Practical	10%	No	Weekly
Module Exams	10%	No	Most weeks

Name	Weighting	Hurdle	Due
Assignment 1	10%	No	Week 6
Assignment 2	20%	No	Week 12
Lab examination	20%	No	Weeks 7, 8, 12, and 13.
Final Examination	30%	No	Week 8 and Week 13

Weekly Practical

Assessment Type ¹: Design Implementation

Indicative Time on Task ²: 22 hours

Due: **Weekly**

Weighting: **10%**

Practical marks are obtained by attendance of practical sessions and making a suitable attempt at the practical work during the session. The practical work in this unit makes up **10%** of the mark. To receive marks student must attend the practical section and demonstrate completion of the section to the practical supervisor. Earning the marks will require not only successful completion of the exercises, but presentation of appropriate documentation, as outlined in the question sheets. Student should complete the practical session in the week it is allocated.

On successful completion you will be able to:

- Understand, build, configure and troubleshoot switched Ethernet LANs and Virtual LANs.
- Explain IP addressing schemes and troubleshoot IPv4 address problems.
- Demonstrate a detailed knowledge of IPv4 routing technology and implement and troubleshoot IPv4 routed network.
- Collaborate and communicate with others in a professional setting.

Module Exams

Assessment Type ¹: Examination

Indicative Time on Task ²: 10 hours

Due: **Most weeks**

Weighting: **10%**

The module examinations ask students to answer conceptual questions about the course material as well as solve simple networking problems.

On successful completion you will be able to:

- Develop an understanding of networking fundamentals.
- Understand, build, configure and troubleshoot switched Ethernet LANs and Virtual LANs.
- Explain IP addressing schemes and troubleshoot IPv4 address problems.
- Demonstrate a detailed knowledge of IPv4 routing technology and implement and troubleshoot IPv4 routed network.
- Conduct professional work ethically with a high level of integrity, autonomy, and accountability.

Assignment 1

Assessment Type ¹: Problem set

Indicative Time on Task ²: 16 hours

Due: **Week 6**

Weighting: **10%**

The purpose of the problem-solving assignment is to help the students to get accustomed to dealing with real world networking problem situations/issues. It is designed to help students analyse problems and find best solutions to these problems. Some questions may require an in-depth research and will be a process to come up with an acceptable and reasonable answer

On successful completion you will be able to:

- Develop an understanding of networking fundamentals.
- Understand, build, configure and troubleshoot switched Ethernet LANs and Virtual LANs.
- Explain IP addressing schemes and troubleshoot IPv4 address problems.
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Assignment 2

Assessment Type ¹: Case study/analysis

Indicative Time on Task ²: 22 hours

Due: **Week 12**

Weighting: **20%**

Students will be presented with a situation showing details of how an organization's network is currently working inefficiently. Students will research and determine the best configuration to help

improve this network's performance. They will need to explain and support the decisions and be able to explain how the changes that are suggested will be of benefit to the organization including describing how the changes will be managed and implemented

On successful completion you will be able to:

- Develop an understanding of networking fundamentals.
- Understand, build, configure and troubleshoot switched Ethernet LANs and Virtual LANs.
- Explain IP addressing schemes and troubleshoot IPv4 address problems.
- Demonstrate a detailed knowledge of IPv4 routing technology and implement and troubleshoot IPv4 routed network.
- Conduct professional work ethically with a high level of integrity, autonomy, and accountability.

Lab examination

Assessment Type ¹: Examination

Indicative Time on Task ²: 2 hours

Due: **Weeks 7, 8, 12, and 13.**

Weighting: **20%**

'Closed book' Practical exam to be held at the end of the teaching period during the examination period.

On successful completion you will be able to:

- Understand, build, configure and troubleshoot switched Ethernet LANs and Virtual LANs.
- Explain IP addressing schemes and troubleshoot IPv4 address problems.
- Demonstrate a detailed knowledge of IPv4 routing technology and implement and troubleshoot IPv4 routed network.
- Conduct professional work ethically with a high level of integrity, autonomy, and accountability.

Final Examination

Assessment Type ¹: Examination

Indicative Time on Task ²: 2 hours

Due: **Week 8 and Week 13**

Weighting: **30%**

Two hour, 'closed book' exam to be held at the end of teaching period during the examination period

On successful completion you will be able to:

- Develop an understanding of networking fundamentals.
- Understand, build, configure and troubleshoot switched Ethernet LANs and Virtual LANs.
- Explain IP addressing schemes and troubleshoot IPv4 address problems.
- Demonstrate a detailed knowledge of IPv4 routing technology and implement and troubleshoot IPv4 routed network.
- Conduct professional work ethically with a high level of integrity, autonomy, and accountability.

¹ If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the [Writing Centre](#) for academic skills support.

² Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

Classes

Each week you should attend two hours of lectures, and a three hour practical workshop. For details of scheduled classes consult the [timetables webpage](#).

Note that practicals workshops (lab sessions) commence in **week 1**. The week-by-week details of the practical (lab) classes will be available from iLearn.

You must attend the practical that you are enrolled in.

Textbook and Reading Materials

The textbooks for this semester are:

- Cisco Networking Academy, [Introduction to Networks Companion Guide \(CCNAv7\)](#), Cisco Press, 2020. ISBN 978-0-136-63367-9
- Cisco Networking Academy, [Switching, Routing, and Wireless Essentials Companion Guide \(CCNAv7\)](#), Cisco Press, 2020. ISBN 978-0-136-72947-1

Web Resources

Unit Websites

Comp3260 is administered via [iLearn \(http://ilearn.mq.edu.au/\)](http://ilearn.mq.edu.au/).

This unit outline can be found in the university's [unit guides](#)

Lecture Recordings

Digital recordings of lectures may be available. They will be linked from iLearn.

Technologies Used and Required

In this unit you will be exposed to the following technology and tools:

- Cisco Packet Tracer software.
- Wireshark Packet Analyzer software.
- Cisco Ethernet Switches and Routers.

General Notes

In this unit, you should do the following:

- Attend lectures, take notes, ask questions.
- Attend your weekly Practical session.
- Ensure that you complete module exams at the end of each week to ensure that you are staying on top of the course materials.
- Read appropriate sections of the text, add to your notes and prepare questions for your lecturer/tutor.
- Work on any assignments that have been released.

Lecture notes will be made available each week but these notes are intended as an outline of the lecture only and are not a substitute for your own notes or the recommended reading list.

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Assessment Procedure](#)
- [Complaints Resolution Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

Students seeking more policy resources can visit [Student Policies \(https://students.mq.edu.au/support/study/policies\)](https://students.mq.edu.au/support/study/policies). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

To find other policies relating to Teaching and Learning, visit [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au) and use the [search tool](#).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/admin/other-resources/student-conduct>

Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit ask.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Academic Integrity

At Macquarie, we believe [academic integrity](#) – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free [online writing and maths support](#), [academic skills development](#) and [wellbeing consultations](#).

Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

The Writing Centre

[The Writing Centre](#) provides resources to develop your English language proficiency, academic writing, and communication skills.

- [Workshops](#)
- [Chat with a WriteWISE peer writing leader](#)
- [Access StudyWISE](#)
- [Upload an assignment to Studiosity](#)
- [Complete the Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

Student Services and Support

Macquarie University offers a range of [Student Support Services](#) including:

- [IT Support](#)
- [Accessibility and disability support](#) with study
- Mental health [support](#)
- [Safety support](#) to respond to bullying, harassment, sexual harassment and sexual assault
- [Social support including information about finances, tenancy and legal issues](#)

Student Enquiries

Got a question? Ask us via [AskMQ](#), or contact [Service Connect](#).

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.