



COMP6170

Networking and Cloud Computing

Session 2, In person-scheduled-weekday, North Ryde 2024

School of Computing

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General Information

Unit convenor and teaching staff

Convenor and Lecturer

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Credit points

10

Prerequisites

Corequisites

Co-badged status

Unit description

This unit introduces students with non-technical backgrounds to the principles and concepts of computer networking and cloud computing. The aim is to provide students with an understanding of the differing ways that networks are structured between corporate environments, the Internet, and The Cloud.

Topics include an introduction to computer organisation, network stacks and protocols, network addressing, inter-networking communications, utility computing, multi-tenanting, and an Introduction to security and network management.

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: Discuss the organisation of physical compute and storage resources.

ULO2: Describe the arrangement and operation of physical networks.

ULO3: Describe or use an arrangement and operation of cloud compute and storage resources.

ULO4: Describe or use an arrangement and operation of virtual networks.

ULO5: Compare and contrast various network management principles and orchestration approaches of cloud compute, communication, and storage resources.

General Assessment Information

Week 1

The unit has three different scheduled class types:

- **Lecture.** Lectures begin in week 1. Attendance is recommended but not compulsory. Lectures are generally available via the ECHO360 to livestream or to view at a later date notwithstanding technical issues.
- **SGTA.** Small Group Teaching Activities begin in week 2. SGTAs are designed to provide students with examples related to lecture material, to relate the lecture material to the workshop exercises, and to act as scaffolding for the term project assessment. Each SGTA will include a preparatory task for the workshop that contributes toward your final mark. This task must be completed in-class.
- **Workshop.** Workshops begin in week 2. Practical classes offer the opportunity for students to engage in hands-on activities in order to apply what has been learned from the readings, lecture materials, and SGTA exercises. Students will complete an associated worksheet that contributes to your final mark. This task worksheet be completed and submitted in-class.

Note that while the practical material is structured to follow the lecture material, students need to keep in mind that there will not always be a one to one mapping between the lecture topics and the weekly SGTA and workshop exercises. This is because of a need for some practical sessions to introduce new tools and techniques before following on from the related concepts from the readings and lecture materials.

Exams

Students will sit two separate exams to assess their understanding of the unit material in an invigilated environment. The mid-semester and final exams are iLearn-based quizzes that assess concepts covered in lectures, SGTAs, and workshops. **There is only 1 attempt at each exam.**

If you miss a module exam due to illness / misadventure, then a supplementary exam will only be arranged upon an approved special consideration application through the university ask.mq.edu.au site. Otherwise, a mark of 0 will be applied for that exam. For details of the exam schedule refer to the COMP6170 unit information section in iLearn for updates and scope of examination. Details of the special considerations policy can be found [here](#).

Requirements to pass this unit

In order to pass the unit, you must achieve a final grade of 50 out of 100 or above. Each

assessment contributes to a certain percentage of the final grade. These weightings are listed in the assessment tasks table in this unit guide.

Late Assessment Submission

Late Assessment Submission Penalty

Unless a Special Consideration request has been submitted and approved, a 5% penalty (of the total possible mark of the task) will be applied for each day a written report or presentation assessment is not submitted, up until the 7th day (including weekends). After the 7th day, a grade of '0' will be awarded even if the assessment is submitted. The submission time for all uploaded assessments is 11:55 pm. A 1-hour grace period will be provided to students who experience a technical concern. For any late submission of time-sensitive tasks, such as scheduled tests/exams, performance assessments/presentations, and/or scheduled practical assessments/labs, please apply for Special Consideration. For example, if the assignment is worth 8 marks (of the entire unit) and your submission is late by 19 hours (or 23 hours 59 minutes 59 seconds), 0.4 marks (5% of 8 marks) will be deducted. If your submission is late by 24 hours (or 47 hours 59 minutes 59 seconds), 0.8 marks (10% of 8 marks) will be deducted, and so on.

Assessments where Late Submissions will be accepted

- Project – YES, Standard Late Penalty applies
- In-class exercises - NO, unless Special Consideration is Granted
- Mid-semester exam - NO, unless Special Consideration is Granted
- Final exam - NO, unless Special Consideration is Granted

Special Consideration

The Special Consideration Policy aims to support students who have been impacted by short-term circumstances or events that are serious, unavoidable and significantly disruptive, and which may affect their performance in assessment. If you experience circumstances or events that affect your ability to complete the assessments in this unit on time, please submit a Special Consideration request through ask.mq.edu.au.

Written Assessments:

If you experience circumstances or events that affect your ability to complete the project assessments in this unit on time, or if you miss the mid-semester exam or final exam, please submit a Special Consideration request through ask.mq.edu.au.

What to do if you miss an SGTA or workshop class or submission due to illness / misadventure:

Please note that the In-Class exercises component of your final mark is calculated by taking your best 4 marks from the first set of 6 weekly exercises, and your best 4 marks from the second set of 6 weekly exercises.

This means that should a Special Consideration request should only be applied for if you miss

more than two of the weekly practical classes in weeks 2 through 7 inclusive, and/or your miss more than two of the weekly practical classes in weeks 8 through 13 inclusive.

Assessment Tasks

Name	Weighting	Hurdle	Due
<u>In-class exercises</u>	20%	No	Weekly
<u>Mid-semester exam</u>	20%	No	Week 8
<u>Project</u>	40%	No	Checkpoint: Sep 15 11:59pm, Final submission: Oct 27 11:59pm
<u>Final exam</u>	20%	No	Exam Period

In-class exercises

Assessment Type ¹: Practice-based task

Indicative Time on Task ²: 12 hours

Due: **Weekly**

Weighting: **20%**

Development of knowledge and skills requires continual practice. Each week, you must complete the practice-based tasks within class and present appropriate documentation, as outlined in the provided weekly practical worksheet.

On successful completion you will be able to:

- Discuss the organisation of physical compute and storage resources.
- Describe the arrangement and operation of physical networks.
- Describe or use an arrangement and operation of cloud compute and storage resources.
- Describe or use an arrangement and operation of virtual networks.
- Compare and contrast various network management principles and orchestration approaches of cloud compute, communication, and storage resources.

Mid-semester exam

Assessment Type ¹: Examination

Indicative Time on Task ²: 11 hours

Due: **Week 8**

Weighting: **20%**

The mid-semester examination asks students to answer conceptual questions about the course material as well as solve simple networking problems.

On successful completion you will be able to:

- Discuss the organisation of physical compute and storage resources.
- Describe the arrangement and operation of physical networks.

Project

Assessment Type ¹: Project

Indicative Time on Task ²: 25 hours

Due: **Checkpoint: Sep 15 11:59pm, Final submission: Oct 27 11:59pm**

Weighting: **40%**

The project tests student's understanding of selected networking and cloud technologies and their usage within an organisation (or across organisations) including issues relating to security.

On successful completion you will be able to:

- Describe or use an arrangement and operation of cloud compute and storage resources.
- Describe or use an arrangement and operation of virtual networks.
- Compare and contrast various network management principles and orchestration approaches of cloud compute, communication, and storage resources.

Final exam

Assessment Type ¹: Examination

Indicative Time on Task ²: 11 hours

Due: **Exam Period**

Weighting: **20%**

The final examination asks students to answer conceptual questions about the course material

as well as solve simple networking and cloud problems.

On successful completion you will be able to:

- Describe or use an arrangement and operation of cloud compute and storage resources.
- Describe or use an arrangement and operation of virtual networks.
- Compare and contrast various network management principles and orchestration approaches of cloud compute, communication, and storage resources.

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

Lectures

Lectures are the primary introduction for content along with the prescribed readings (see below for details). The lecture is 2 hours each week. Students enrolled in the "live stream" class for the lecture are welcome to attend the lecture on campus. The lectures are recorded using the ECHO360 platform and recordings (assuming no technical difficulties occur) are made available through the unit iLearn page.

Small Group Teaching Activities (SGTA) and Workshop Classes

Scheduled SGTA and Workshop classes for COMP6170 start in week 2. Also note that due to the Labour Day public holiday a take home exercise will be given for you to complete in-lieu of there being no scheduled class that week.

Each week, students should attend two hours of lectures, a one hour SGTA, and a two hour workshop (except in week 1, and week 10 as noted above). For details of days, times and rooms consult eStudent.

Students must attend the classes that they are enrolled in.

Text Books and Digital Resources (Leganto)

The textbook for the unit is:

Fitzgerald, J. & Dennis, A, Business Data Communications and Networking, Fourteenth

Edition, Wiley, 2021

The university does have a *limited number* of 'seats' available for online access to this text book (using your OneID to log in) through the Leganto block on iLearn.

Any additional reading for the unit will be provided via links accessed via iLearn.

Technologies Used and Required

This unit will be using lab computers for the workshop activities, quizzes and exams must be completed on the lab computers. As all the software used in the unit is free of cost, for some activities students will be encouraged to bring their personal laptop computer to class.

Communication Methods in COMP6170

All announcements about unit-related matters will be communicated through iLearn. It is the student's responsibility to ensure they check iLearn announcements, forums, and FAQ sections regularly.

Students are encouraged to use the iLearn forums for asking questions about unit content and concepts. Where questions are about specific details in an assessment submission, this may need to be sent via a private forum post in the first instance (details are provided in iLearn about how this is set up) so as not to be at risk of breaching the university academic integrity policy.

Students should use the appropriate iLearn forms for contacting staff. There may be occasions where unit staff will email a student directly to their @students.mq.edu.au email address. It is the student's responsibility to ensure they check their official university email regularly for communications from the university staff. Ensure that you read the unit iLearn communications section carefully about where to best direct your query depending on the nature of the query.

COVID Information

For the latest information on the University's response to COVID-19, please refer to the Coronavirus infection page on the Macquarie website: <https://www.mq.edu.au/about/coronavirus-faqs>. Remember to check this page regularly in case the information and requirements change during semester. If there are any changes to this unit in relation to COVID, these will be communicated via iLearn.

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 connect.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 Advocacy](#) provides independent advice on MQ policies, procedures, and processes

Student Enquiries

Got a question? Ask us via the [Service Connect Portal](#), 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.

Changes since First Published

Date	Description
08/07/2024	Corrected the date of the mid-semester exam.

Unit information based on version 2024.02 of the [Handbook](#)