



COMP8290

Multimedia Networks and Real Time Protocols

Session 1, In person-scheduled-weekday, North Ryde 2025

School of Computing

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General Information

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Credit points

10

Prerequisites

COMP6010 and COMP6250

Corequisites

Co-badged status

Unit description

This course focuses on recent advances in multimedia networking technologies and protocols. The multimedia transportation requires the network to support timely and errorless transmission much more strictly than other data. This had led to the development of state of the art technologies, protocols and mechanisms to support multimedia traffic over the network. Major topics include multimedia compression and standards, quality of service (QoS) support mechanisms and protocols, performance analysis, queuing principles, IP multicasting, Internet multimedia applications, and multimedia transport over wireless networks.

Learning in this unit enhances student understanding of global challenges identified by the United Nations Sustainable Development Goals ([UNSDGs](#)) Industry, Innovation and Infrastructure

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: Analyse and design various types of network architectures, protocols, and mechanisms to support multimedia.

ULO2: Characterise and classify different classes of network traffic in order to assess its impact on the network.

ULO3: Describe and design end systems support for multimedia transport.

ULO4: Use simulation tools to analyse and evaluate the performance of multimedia networked systems.

ULO5: Describe, analyse and critically evaluate different IP multicasting techniques.

ULO6: Engage in independent professional work with a high level of autonomy and accountability.

General Assessment Information

Release Dates

- Assignment 1: To be released no later than 25th March.
- Assignment 1: To be released no later than 15th May.

Requirements to Pass this Unit

To pass this unit you must:

1. Achieve a total mark equal to or greater than 50%

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

- Assignment 1 - YES, Standard Late Penalty applies
- Assignment 2 - YES, Standard Late Penalty applies

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 inform the convenor and submit a Special Consideration request through <http://connect.mq.edu.au/>.

Assessment Tasks

Name	Weighting	Hurdle	Due
Quiz 2	10%	No	Practical class In week 11
Quiz 1	10%	No	Practical class In week 5
Assignment 2	30%	No	11:55 pm on Sunday ending week 12
Assignment 1	10%	No	11:55 pm on Sunday ending week 6
Final Examination	40%	No	Exam Period

Quiz 2

Assessment Type ¹: Quiz/Test

Indicative Time on Task ²: 5 hours

Due: **Practical class In week 11**

Weighting: **10%**

A quiz is a short test that will be based on your previously covered lecture material. For example, week 5 quiz will be based on lectures done in weeks 1-4. The quiz serves as a feedback mechanism to monitor your progress in the unit.

On successful completion you will be able to:

- Describe and design end systems support for multimedia transport.
- Describe, analyse and critically evaluate different IP multicasting techniques.

Quiz 1

Assessment Type ¹: Quiz/Test

Indicative Time on Task ²: 5 hours

Due: **Practical class In week 5**

Weighting: **10%**

A quiz is a short test that will be based on your previously covered lecture material. For example, week 5 quiz will be based on lectures done in weeks 1-4. The quiz questions will be handed over to you at the beginning of your Lecture class. Each quiz contributes 10% of the total mark and serves as a feedback mechanism to monitor your progress in the unit.

On successful completion you will be able to:

- Analyse and design various types of network architectures, protocols, and mechanisms to support multimedia.
- Characterise and classify different classes of network traffic in order to assess its impact on the network.
- Describe and design end systems support for multimedia transport.

Assignment 2

Assessment Type ¹: Project

Indicative Time on Task ²: 20 hours

Due: **11:55 pm on Sunday ending week 12**

Weighting: **30%**

Report Writing and Presentation: Students will leverage their knowledge of multimedia systems and real time protocols to research and critically analyse relevant literature in the discipline and present conclusions. The assessment also allows students to further develop their team working and professional communication skills.

On successful completion you will be able to:

- Describe and design end systems support for multimedia transport.
- Describe, analyse and critically evaluate different IP multicasting techniques.
- Engage in independent professional work with a high level of autonomy and accountability.

Assignment 1

Assessment Type ¹: Problem set

Indicative Time on Task ²: 15 hours

Due: **11:55 pm on Sunday ending week 6**

Weighting: **10%**

The purpose of this problem solving assignment is to help the students to get accustomed to dealing with real world problem situations/issues. It is designed to help students analyse a particular problem and find its best solution. 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:

- Analyse and design various types of network architectures, protocols, and mechanisms to support multimedia.
- Characterise and classify different classes of network traffic in order to assess its impact on the network.
- Describe and design end systems support for multimedia transport.
- Use simulation tools to analyse and evaluate the performance of multimedia networked systems.

Final Examination

Assessment Type ¹: Examination

Indicative Time on Task ²: 30 hours

Due: **Exam Period**

Weighting: **40%**

Final examination

On successful completion you will be able to:

- Analyse and design various types of network architectures, protocols, and mechanisms to support multimedia.
- Characterise and classify different classes of network traffic in order to assess its impact on the network.
- Describe and design end systems support for multimedia transport.

- Use simulation tools to analyse and evaluate the performance of multimedia networked systems.
 - Describe, analyse and critically evaluate different IP multicasting techniques.
 - Engage in independent professional work with a high level of autonomy and accountability.
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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

Lecture will commence since Week 1 and practical workshop will commence since week 2.

Methods of Communication

We will communicate with you via your university email and through announcements on iLearn. Queries to convenors can either be placed on the iLearn discussion board or sent to the unit convenor via the contact email on 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 \(https://students.mq.edu.au/su\)](https://students.mq.edu.au/su)

[pport/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>) 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 from Previous Offering

Student feedback from the previous offering of this unit was very positive overall, with students pleased with the clarity around assessment requirements and the level of support from teaching staff. As such, no change to the delivery of the unit is planned, however we will continue to strive to improve the level of support and the level of student engagement.

Unit information based on version 2025.02 of the [Handbook](#)