



COMP3255

Introduction to Mobile Communications

Session 1, In person-scheduled-weekday, North Ryde 2024

School of Computing

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General Information

Unit convenor and teaching staff

Convenor, Lecturer

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Lecturer

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Credit points

10

Prerequisites

COMP2250 or COMP247

Corequisites

Co-badged status

COMP6255

Unit description

This unit will delve into the fundamental concepts, design principles, and models employed in contemporary mobile and wireless networks. It places particular emphasis on Wireless Local Area Networks (WLANs) and Cellular Networks. Throughout this unit, students will gain a comprehensive grasp of pertinent protocols and technologies, along with their practical applications in the mobile and wireless field. Additionally, this unit will equip students with hands-on expertise in designing, configuring, installing, and resolving issues within wireless and mobile networks.

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: Identify and apply the appropriate techniques such as mobility management, location/handoff management, routing, frequency management, cross-layer optimisation, cellular systems, and IP interfacing.

ULO2: Configure, troubleshoot, and performance-test mobile networks for key mobile protocols and standards.

ULO3: Perform security management for mobile communications.

ULO4: Building, configuring, and troubleshooting networks and performance-testing.

ULO5: Explain how distributed applications are supported by mobile networks.

General Assessment Information

Requirements to pass this unit

In order to pass this unit, you must satisfy the following requirements:

- You must score 40 % or more in the **Final Exam**; and
- You must achieve an overall mark of 50 % or more in this unit.

Hurdle Assessments

The **Final Exam** is the only hurdle assessment in this unit. It assesses knowledge, understanding, and skills that you are expected to have acquired on completion of this unit. Since it is conducted under supervised closed-book conditions, a pass in this assessment provides assurance that you have legitimately achieved the course outcomes. The minimum pass mark is 40 %.

If you fail to satisfy the minimum exam pass mark requirement on your first attempt in spite of your making a serious attempt in this attempt but you have scored a progressive mark of at least 40 % across the other assessment components, you will be eligible to sit a supplementary exam. You are deemed to have made a serious attempt in this exam if and only if the following conditions are fulfilled: (1) You have made a genuine attempt at a range of questions that are worth in excess of 50 % of the available marks in the exam; and (2) You have attempted the exam with integrity (i.e. without resorting to unfair means).

Consequently, if you fail to pass the exam on your first attempt, you will not be eligible to sit a supplementary exam if either of the following conditions applies: (1) Your first attempt at the exam was not serious; or (2) You have failed to satisfy the "progressive mark" criterion as outlined above.

If you are eligible to sit a supplementary exam, the following rules apply: (1) If you pass this supplementary exam, your result in your first exam attempt will be discarded; your final exam result will be based on the supplementary exam alone; and (2) If you fail to meet the minimum pass mark requirement in the supplementary exam, your final exam result will be the better of your two exam attempts.

If your final exam result is less than 40 %, your final mark for this unit will be capped at 49; this means you would fail this unit.

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 one 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](#).

Assessments where Late Submissions will be accepted

Assignment 1 - YES, Standard Late Penalty applies

Mid-session Quiz- NO, unless Special Consideration is granted

Assignment 2a - YES, Standard Late Penalty applies

Assignment 2b - NO, unless Special Consideration is granted

Workshops - 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 inform the convenor and submit a Special Consideration request through ask.mq.edu.au.

Language of Assessment

The language of assessment is English. You must complete all assessment tasks in English without the use of an interpreter or translator unless the University has given you special permission.

Use of Artificial Intelligence

Artificial intelligence (AI) tools must not be used in assessment tasks except for Assignment 2a and Workshops.

For Assignment 2a, information on permissible AI use will be included in the assignment description.

For Workshops, you are free to use AI for any reason that is related to the coursework as long as your use is consistent with the [Academic Integrity Policy](#) and the requirements outlined in the "Language of Assessment" section.

Assessment Tasks

Name	Weighting	Hurdle	Due
Assignment 1	15%	No	26/03/2024

Name	Weighting	Hurdle	Due
Mid-Session Quiz	10%	No	04/04/2024
Assignment 2a	15%	No	21/05/2024
Assignment 2b	10%	No	30/05/2024
Workshops	10%	No	Weekly
Final Exam	40%	Yes	Exam period

Assignment 1

Assessment Type ¹: Practice-based task

Indicative Time on Task ²: 20 hours

Due: **26/03/2024**

Weighting: **15%**

The purpose of the 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.

On successful completion you will be able to:

- Identify and apply the appropriate techniques such as mobility management, location/handoff management, routing, frequency management, cross-layer optimisation, cellular systems, and IP interfacing.
- Perform security management for mobile communications.
- Explain how distributed applications are supported by mobile networks.

Mid-Session Quiz

Assessment Type ¹: Quiz/Test

Indicative Time on Task ²: 10 hours

Due: **04/04/2024**

Weighting: **10%**

The Quiz measures students' knowledge and comprehension of unit materials. Quiz Question types include multiple choice, matching items, true/false, short answer and many more. Quizzes usually span multiple learning outcomes.

On successful completion you will be able to:

- Identify and apply the appropriate techniques such as mobility management, location/handoff management, routing, frequency management, cross-layer optimisation, cellular systems, and IP interfacing.
- Configure, troubleshoot, and performance-test mobile networks for key mobile protocols and standards.
- Perform security management for mobile communications.
- Explain how distributed applications are supported by mobile networks.

Assignment 2a

Assessment Type ¹: Practice-based task

Indicative Time on Task ²: 18 hours

Due: **21/05/2024**

Weighting: **15%**

Written Assignment: Design and implementation: Design, configure, implement mobile infrastructure for a given application scenario.

On successful completion you will be able to:

- Identify and apply the appropriate techniques such as mobility management, location/handoff management, routing, frequency management, cross-layer optimisation, cellular systems, and IP interfacing.
- Perform security management for mobile communications.
- Building, configuring, and troubleshooting networks and performance-testing.
- Explain how distributed applications are supported by mobile networks.

Assignment 2b

Assessment Type ¹: Viva/oral examination

Indicative Time on Task ²: 10 hours

Due: **30/05/2024**

Weighting: **10%**

Oral Exam: Design and implementation: Design, configure, implement mobile infrastructure for a given application scenario.

On successful completion you will be able to:

- Identify and apply the appropriate techniques such as mobility management, location/handoff management, routing, frequency management, cross-layer optimisation, cellular systems, and IP interfacing.
- Perform security management for mobile communications.
- Building, configuring, and troubleshooting networks and performance-testing.
- Explain how distributed applications are supported by mobile networks.

Workshops

Assessment Type ¹: Practice-based task

Indicative Time on Task ²: 10 hours

Due: **Weekly**

Weighting: **10%**

Workshops provide you with the opportunity to practise networking skills under the supervision of demonstrators. Workshops also allow you to discuss problems effectively with teaching staff and peers while offering you the opportunity to gain valuable feedback on your work and progress.

On successful completion you will be able to:

- Configure, troubleshoot, and performance-test mobile networks for key mobile protocols and standards.
- Building, configuring, and troubleshooting networks and performance-testing.

Final Exam

Assessment Type ¹: Examination

Indicative Time on Task ²: 30 hours

Due: **Exam period**

Weighting: **40%**

This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)

Students will complete a 2-hour-long exam. All topics covered in the lectures will be examinable.

An examination allows us to individually and securely assess student's mastery of the coursework material. The examination will be closed book and will be held on campus during the exam period.

On successful completion you will be able to:

- Identify and apply the appropriate techniques such as mobility management, location/handoff management, routing, frequency management, cross-layer optimisation, cellular systems, and IP interfacing.
 - Perform security management for mobile communications.
 - Explain how distributed applications are supported by mobile networks.
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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

Week 1 Classes

Lectures and workshops begin in Week 1.

Methods of Communication

We will primarily use announcements in iLearn to communicate with you. However, email will be used for one-on-one written communications.

If you have a question about the unit material, please post it in the iLearn discussion board. For administrative matters, please contact the unit convenor by email.

COVID-19 Information

You can find the latest information on the University's COVID-19 policies at <https://www.mq.edu.au/about/coronavirus-faqs>. Please remember to check this page periodically for updates.

If there are any changes to this unit due to a COVID-19 related reason, we will make an iLearn announcement to inform you of these changes.

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

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.

Changes from Previous Offering

The three quizzes have been replaced by a mid-session quiz.

The second assignment now includes written coursework and an oral examination.

A final examination has been added.

Changes since First Published

Date	Description
05/02/2024	The paragraph that begins with the words 'If you fail to pass the exam on your first attempt due to failure...' has been replaced with the following paragraph: 'Consequently, if you fail to pass the exam on your first attempt, you will not be eligible to sit a supplementary exam if either of the following conditions applies: (1) Your first attempt at the exam was not serious; or (2) You have failed to satisfy the "progressive mark" criterion as outlined above.'
04/02/2024	The following corrections were made: - Changed "mimimum" to "minimum"; and - Changed "outined" to "outlined".

Unit information based on version 2024.05 of the [Handbook](#)