COMP1010

Fundamentals of Computer Science

Session 2, In person-scheduled-weekday, North Ryde 2026

School of Computing

Contents

General Information

Unit convenor and teaching staff
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Credit points
10

Prerequisites
COMP1000 or admission to BActStud

Corequisites

Co-badged status

Unit description
This unit studies programming as a systematic discipline and introduces more formal software design methods. Programming skills are extended to include elementary data structures and abstract data types. There is a strong emphasis on problem solving and algorithms, including aspects of correctness, complexity and computability.

Learning in this unit enhances student understanding of global challenges identified by the United Nations Sustainable Development Goals (UNSDGs) Quality Education; 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: apply enhanced problem solving skills to develop algorithms

ULO2: implement programs from algorithms, showing an understanding of control flow

ULO3: adhere to standard software engineering practices, including documentation, unit testing and debugging

ULO4: compare different methods available for the same problem in terms of efficiency and other criteria

ULO5: demonstrate foundational learning skills including active engagement in their learning process

General Assessment Information

SKILLS LAB AND MODULE EXAM

There are two in-class observed assessments in this unit

1. **Skills Lab (40%)**
2. **Module Quiz (40%)**

All students get at least **TWO** attempts for each of the in-class observed assessments.

THIRD ATTEMPT RULE

For skills lab, only students who have made at least one attempt, or have special consideration approval for at least one attempt, and who have a unit total of less than 50, will be invited for a third attempt for the skills lab during the final exam period.

Similarly, for the module quiz, only students who have made at least one attempt, or have special consideration approval for at least one attempt, and who have a unit total of less than 50, will be invited for a third attempt for the module quiz during the final exam period.

If you sit a third attempt for skills lab and/or module quiz, your UNIT TOTAL (not your quiz mark) will be capped at 50.

Universal design for learning (UDL) - Invigilated assessments have been designed with universal design strategies in mind, which may remove the need for individual reasonable adjustments. All students will have up to 50% extra time to complete these assessments. This extra time has been applied to all students. Students with IEAP arrangements do not need further overrides, and if they have more questions about UDL, they should contact the accessibility team at accessibility@mq.edu.au.

ASSIGNMENTS

There is one major assignment worth 20%. More information will be provided on iLearn. **Use of Generative AI is permitted**, **but** you should use it in a manner that furthers your understanding rather than submitting the work of LLMs as your own. If you do not learn from doing the assignment yourself (even if with the assistance of GenAI), you will be unable to develop the skills required for the workplace, assessed by the in-class, invigilated skills lab and module quiz.

RELEASE DATES

The latest dates the assignment will be released by are listed below:

- Major Assignment - To be released no later than Sunday 11:55pm Week 6

SGTA PARTICIPATION

Students are expected to attend SGTAs every week.

LATE SUBMISSION POLICY

- **5% penalty per day:** If you submit your assessment late, **5% of the total possible marks** will be deducted for each day (including weekends), up to 7 days.
    - *Example 1 (out of 100):* If you score 85/100 but submit 20 hours late, you will lose 5 marks and receive **80/100**.
    - *Example 2 (out of 30):* If you score 27/30 but submit 1 day late, you will lose 1.5 marks and receive **25.5/30**.
- **After 7 days:** Submissions more than 7 days late will receive a **mark of 0**.
- **Extensions:**
    - **Automatic short extension**: Some assessments are eligible for automatic short extension. You can only apply for an automatic short extension before the due date.
    - **Special Consideration**: If you need more time due to serious issues and for any assessments that are not eligible for Short Extension, you must apply for Special Consideration.

Need help? Review the Special Consideration page HERE

ASSESSMENTS WHERE LATE SUBMISSIONS WILL BE ACCEPTED

- Major Assignment: YES, Standard Late Penalty applies
- Skills Lab: NO
- Module Exam: NO

REQUIREMENTS TO PASS THIS UNIT

Achieve 50 or more marks overall.

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.

Written Assessments: If you experience circumstances or events that affect your ability to

complete the written 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	Groupwork/Individual	Short Extension	AI Approach
Skills Lab	40%	No	1st week of teaching recess + Week 9 SGTA	Individual	No	Observed
Major Assignment	20%	No	08/10/2026	Individual	Yes	Open
Module Quiz	40%	No	Week 12, 13 SGTAs	Individual	No	Observed

Skills Lab

Assessment Type [1]: Experiential task
Indicative Time on Task [2]: 30 hours
Due: **1st week of teaching recess + Week 9 SGTA**
Weighting: **40%**
Groupwork/Individual: Individual
Short extension [3]: No
AI Approach: Observed

Students will be assessed on the practical skills in coding.

On successful completion you will be able to:

- apply enhanced problem solving skills to develop algorithms
- implement programs from algorithms, showing an understanding of control flow
- demonstrate foundational learning skills including active engagement in their learning process

Major Assignment

Assessment Type [1]: Portfolio
Indicative Time on Task [2]: 25 hours
Due: **08/10/2026**
Weighting: **20%**
Groupwork/Individual: Individual
Short extension [3]: Yes
AI Approach: Open

Major Assignment assesses students on contents from the entire session.

On successful completion you will be able to:

- apply enhanced problem solving skills to develop algorithms
- implement programs from algorithms, showing an understanding of control flow
- adhere to standard software engineering practices, including documentation, unit testing and debugging
- compare different methods available for the same problem in terms of efficiency and other criteria
- demonstrate foundational learning skills including active engagement in their learning process

Module Quiz

Assessment Type [1]: Examination
Indicative Time on Task [2]: 30 hours
Due: **Week 12, 13 SGTAs**
Weighting: **40%**
Groupwork/Individual: Individual
Short extension [3]: No
AI Approach: Observed

End of session quiz on select contents from the entire session.

On successful completion you will be able to:

- apply enhanced problem solving skills to develop algorithms
- implement programs from algorithms, showing an understanding of control flow
- demonstrate foundational learning skills including active engagement in their learning process

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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
- Academic Success 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.

[3] An automatic short extension is available for some assessments. Apply through the Service Connect Portal.

Delivery and Resources

RESOURCES

We have developed several resources that can help you get a headstart as well as assist you over the session to stay on top of the game. These include,

- Practice questions
    - Codingbat: https://codingbat.com/home/gaurav.gupta@mq.edu.au
    - CodeRunner practice questions (on iLearn)
    - Practice Package
    - Software Technology Lecture Notes
- YouTube videos
    - COMP1010 Video Library on YouTube
- Computing Drop-in Centre - The support centre is located in 4RPD G02 across Esc Cafe, and is open every weekday. Although almost all support assistants are proficient in COMP1010, please use the live roster (to be announced on iLearn) to check which sessions have a support person skilled to help with COMP1010.

CLASSES

Each week you should attend

- a two-hour lecture, and,
- a two-hour practical class

For details of days, times, and rooms, consult your personalized timetables page.

WEEK 1 CLASSES

Note that Lectures and Practical classes commence in week 1.

You should have selected a practical class during enrolment. **You should attend the practical class in which you are enrolled**. You won't always get the class of your choice. Teaching staff do not have the ability to move students into their preffered class. Check availabilities via **eStudent** regularly.

TEXTS AND/OR MATERIALS

Lecture notes are available online at https://softwaretechnologymq.github.io/

Practical classes and Video teaching materials: details to be announced via iLearn

RECOMMENDED TEXTBOOKS:

1. **T. Gaddis, Starting out with Java: From control structures through objects (Pearson), Global edition (6th). ISBN 9781292110653**
    - Online edition of this book is available through MQ Library. There can be up to 5 simultaneous accesses.
2. **Kathy Siera, Bert Bates, Head First Java, 2nd edition. ISBN 9780596009205**

TECHNOLOGY USED AND REQUIRED

Audio and Video Lecture

Digital recordings of lectures are available from within iLearn via **Active Learning Platform**.

TECHNOLOGY

- Java SE - download the latest Java SE to be compatible with the labs.
- Visual Studio Code (preferred, troubleshooting provided) or Eclipse (if you are proficient, independent) - the IDEs we shall be using during the session.
- Learning Management System iLearn.
- https://code2flow.com/ for a better understanding of control flow.
- http://codingbat.com/ for programming exercises.
- https://pythontutor.com/java.html for tracing your code.

DISCUSSION BOARDS

The unit makes use of forums hosted within iLearn. Please post questions there, they are monitored by the unit staff.

METHODS OF COMMUNICATION

We will communicate with you via your university email and through announcements on iLearn.

IMPORTANT - Use discussion forums for general queries (that relate to a significant portion of the cohort)

Note that three important themes will pervade the entire unit:

1. **Problem-solving**. A crucial skill for all of the weekly topics will be to write appropriate code to meet a given problem specification. This theme relates to the first two learning

outcomes for this unit.

2. **Software development**. The use of JUnit testing framework is an important development practice that will be taught from the beginning and used throughout the unit. This theme relates to the third learning outcome of this unit.
3. **Comparing different solution methods**. Very often different algorithms are available for the same problem. Another important skill to develop throughout this unit is the ability to compare different algorithms in terms of efficiency and other criteria. This theme relates to the fourth learning outcome of this unit.

Unit Schedule

The following schedule is tentative. See iLearn for the most up to date unit schedule.

Week	Lecture	Exams	Assignment
1	Problem solving, Unit testing		
2	Visual Studio Code, JUnit testing		
3	ArrayLists - 1		
4	ArrayLists - 2		
5	Classes and Objects - 1		
6	Classes and Objects - 2		
7	Classes and Objects - 3		
8	File I/O, Terminal/Command Prompt		Major Assignment Checkpoint
Teaching recess, week 1	Catchup on your studies	Skills Lab Attempt 1	
Teaching recess, week 2	Catchup on your studies		
9	Recursive Data Structures - 1	Skills Lab Attempt 2	Major Assignment Due
10	Recursive Data Structures - 2		
11	Recursive Data Structures - 3		
12	Stand-alone recursion	Module Quiz Attempt 1	
13	Topics for transition to Second-year programming units	Module Quiz Attempt 2	

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (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). 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/

Academic Success

Academic Success provides resources to develop your English language proficiency, academic writing, and communication skills.

- Ask a Study Coach
- 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 https://students.mq.edu.au/support/technology/service-desk.

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

We value student feedback to be able to continually improve the way we offer our units. As such we encourage students to provide constructive feedback via student surveys, to the teaching staff directly, or via the FSE Student Experience & Feedback link in the iLearn page.

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.

Changes since First Published

Date	Description
21/07/2026	Fixed unit schedule table
13/07/2026	Changes from previous offering fixed.

Unit information based on version 2026.03 of the Handbook