COMP1010
Fundamentals of Computer Science
Session 2, Special circumstance 2020

Department of Computing

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Notice
As part of Phase 3 of our return to campus plan, most units will now run tutorials, seminars and other small group learning activities on campus for the second half-year, while keeping an online version available for those students unable to return or those who choose to continue their studies online.

To check the availability of face to face activities for your unit, please go to timetable viewer. To check detailed information on unit assessments visit your unit’s iLearn space or consult your unit convenor.
General Information

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To be advised via iLearn

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Credit points
10
Important Academic Dates
Information about important academic dates including deadlines for withdrawing from units are available at [https://students.mq.edu.au/important-dates](https://students.mq.edu.au/important-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 the underlying architecture of the computer
- **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
Late Submission
No extensions will be granted without an approved application for Special Consideration. There will be a deduction of 20% of the assignment marks made from the total awarded mark for each 24 hour period or part thereof that the submission is late. For example, 25 hours late in submission for an assignment worth 10 marks – 40% penalty or 4 marks deducted from the total. No submission will be accepted after the solutions have been posted.
# Assessment Tasks

<table>
<thead>
<tr>
<th>Name</th>
<th>Weighting</th>
<th>Hurdle</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online quiz 1</td>
<td>10%</td>
<td>No</td>
<td>Week 7</td>
</tr>
<tr>
<td>Online quiz 2</td>
<td>10%</td>
<td>No</td>
<td>Week 9</td>
</tr>
<tr>
<td>Online quiz 3</td>
<td>10%</td>
<td>No</td>
<td>Week 11</td>
</tr>
<tr>
<td>Online quiz 4</td>
<td>10%</td>
<td>No</td>
<td>Week 13</td>
</tr>
<tr>
<td>Assignment 1</td>
<td>10%</td>
<td>No</td>
<td>Week 3</td>
</tr>
<tr>
<td>Assignment 2</td>
<td>10%</td>
<td>No</td>
<td>Week 6</td>
</tr>
<tr>
<td>Assignment 3</td>
<td>10%</td>
<td>No</td>
<td>Week 10</td>
</tr>
<tr>
<td>Assignment 4</td>
<td>10%</td>
<td>No</td>
<td>Week 13</td>
</tr>
<tr>
<td>End-of-semester exam</td>
<td>20%</td>
<td>No</td>
<td>Exam period</td>
</tr>
</tbody>
</table>

## Online quiz 1

**Assessment Type:** Quiz/Test  
**Indicative Time on Task:** 5 hours  
**Due:** Week 7  
**Weighting:** 10%

Online quiz to assess knowledge of classes and objects

On successful completion you will be able to:

- apply enhanced problem solving skills to develop algorithms
- implement programs from algorithms, showing an understanding of the underlying architecture of the computer
- 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
Online quiz 2
Assessment Type 1: Quiz/Test
Indicative Time on Task 2: 5 hours
Due: Week 9
Weighting: 10%

Quiz to assess understanding of recursion.

On successful completion you will be able to:
- apply enhanced problem solving skills to develop algorithms
- implement programs from algorithms, showing an understanding of the underlying architecture of the computer
- 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

Online quiz 3
Assessment Type 1: Quiz/Test
Indicative Time on Task 2: 5 hours
Due: Week 11
Weighting: 10%

Quiz to assessment understanding of the built-in ArrayList class

On successful completion you will be able to:
- apply enhanced problem solving skills to develop algorithms
- implement programs from algorithms, showing an understanding of the underlying architecture of the computer
- 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
Online quiz 4
Assessment Type 1: Quiz/Test
Indicative Time on Task 2: 5 hours
Due: Week 13
Weighting: 10%

Quiz to assess understanding of custom-built data structures and recursive data structures

On successful completion you will be able to:
• apply enhanced problem solving skills to develop algorithms
• implement programs from algorithms, showing an understanding of the underlying architecture of the computer
• 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

Assignment 1
Assessment Type 1: Programming Task
Indicative Time on Task 2: 8 hours
Due: Week 3
Weighting: 10%

Assignment to assess problem solving skills, understanding of primitive data types and operations, control structures, arrays and methods.

On successful completion you will be able to:
• apply enhanced problem solving skills to develop algorithms
• implement programs from algorithms, showing an understanding of the underlying architecture of the computer
• 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

Assignment 2
Assessment Type 1: Programming Task
Indicative Time on Task 2: 8 hours
Due: Week 6
Weighting: 10%

Assignment to assess problem solving skills and understanding of classes and objects.

On successful completion you will be able to:
• apply enhanced problem solving skills to develop algorithms
• implement programs from algorithms, showing an understanding of the underlying architecture of the computer
• 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

Assignment 3
Assessment Type 1: Programming Task
Indicative Time on Task 2: 8 hours
Due: Week 10
Weighting: 10%

Assignment to assess problem-solving using built-in ArrayList class.

On successful completion you will be able to:
• apply enhanced problem solving skills to develop algorithms
• implement programs from algorithms, showing an understanding of the underlying architecture of the computer
• 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

Assignment 4
Assessment Type 1: Programming Task
Indicative Time on Task 2: 8 hours
Due: Week 13
Weighting: 10%

Assignment to assess problem solving skills using recursive data structures.

On successful completion you will be able to:
• apply enhanced problem solving skills to develop algorithms
• implement programs from algorithms, showing an understanding of the underlying architecture of the computer
• 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

End-of-semester exam
Assessment Type 1: Examination
Indicative Time on Task 2: 14 hours
Due: Exam period
Weighting: 20%

End of semester exam to assess achievement of learning outcomes 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 the underlying architecture of the computer
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

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 Learning Skills Unit 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

• three hours of lectures (delivered online, details to be announced via iLearn),
• two hour practical class

For details of days, times and rooms, consult the timetables webpage.

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. Check availabilities via eStudent regularly. If ALL practical classes are full, only then, contact the convenor.

Please note that you are required to submit work regularly. You will get the help that you need by attending your practical class. Failure to submit work may result in you failing the unit (see the precise requirements in the "Grading Standards" section) or being excluded from the final examination.

TEXTS AND/OR MATERIALS
Lecture notes: https://rebrand.ly/COMP1010LectureNotes
Recommended Textbooks:

   - Online edition of this book is available through MQ Library. There can be up to 5 simultaneous accesses. Click on "Full text available at: 2018 eTextbooks" and login with OneID and password.


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.
- **Eclipse** and **Visual Studio Code** - the IDEs we shall be using during the session.
- Learning Management System **iLearn**
- **http://codingbat.com/** for programming exercises.

Discussion Boards

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

Unit Schedule

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.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Programming environment (language, IDEs)</td>
<td>Diagnostic test (does not contribute towards final mark)</td>
</tr>
<tr>
<td>2</td>
<td>Problem-solving, JUnit testing</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Classes and Objects - 1</td>
<td>Assignment 1 Due</td>
</tr>
<tr>
<td>4</td>
<td>Classes and Objects - 2</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Recursion - 1</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Binary search, Merge Sort</td>
<td>Assignment 2 Due</td>
</tr>
<tr>
<td>7</td>
<td>List Interface, ArrayList class</td>
<td>Online Quiz 1</td>
</tr>
<tr>
<td>8</td>
<td>Iterators</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Custom-built ArrayList</td>
<td>Online Quiz 2</td>
</tr>
<tr>
<td>10</td>
<td>Self-referencing classes (Node class)</td>
<td>Assignment 3 Due</td>
</tr>
<tr>
<td>11</td>
<td>Custom-built LinkedList</td>
<td>Online Quiz 3</td>
</tr>
<tr>
<td>12</td>
<td>Advanced topics</td>
<td></td>
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<tr>
<td>13</td>
<td>Revision</td>
<td>Online quiz 4, Assignment 4</td>
</tr>
</tbody>
</table>

### Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). 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
- Grade Appeal Policy
- Complaint Management Procedure for Students and Members of the Public
- Special Consideration Policy *(Note: The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.)*

Students seeking more policy resources can visit the Student Policy Gateway (https://students.mq.edu.au/support/study/student-policy-gateway). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.
If you would like to see all the policies relevant to Learning and Teaching visit Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central).

**Student Code of Conduct**

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/study/getting-started/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

**Student Support**

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

**Learning Skills**

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

- Getting help with your assignment
- Workshops
- StudyWise
- 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 Enquiry Service**

For all student enquiries, visit Student Connect at ask.mq.edu.au

If you are a Global MBA student contact globalmba.support@mq.edu.au

**Equity Support**

Students with a disability are encouraged to contact the Disability Service who can provide appropriate help with any issues that arise during their studies.

**IT Help**

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

Due to COVID-restrictions, the assessment structure has significantly changed. Please see the section on Assessments Tasks for further details.

There are no hurdle assessments.