



COMP2000

Object-Oriented Programming Practices

Session 2, Special circumstances 2021

Department of Computing

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Session 2 Learning and Teaching Update

The decision has been made to conduct study online for the remainder of Session 2 for all units WITHOUT mandatory on-campus learning activities. Exams for Session 2 will also be online where possible to do so.

This is due to the extension of the lockdown orders and to provide certainty around arrangements for the remainder of Session 2. We hope to return to campus beyond Session 2 as soon as it is safe and appropriate to do so.

Some classes/teaching activities cannot be moved online and must be taught on campus. You should already know if you are in one of these classes/teaching activities and your unit convenor will provide you with more information via iLearn. If you want to confirm, see the list of [units with mandatory on-campus classes/teaching activities](#).

Visit the [MQ COVID-19 information page](#) for more detail.

General Information

Unit convenor and teaching staff

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Credit points

10

Prerequisites

COMP1010 or COMP125

Corequisites

Co-badged status

Unit description

Object-oriented programming is a key technology for modern computing. This unit bridges the gap between introductory programming and larger multi-person projects by considering the use of object-oriented techniques to produce intermediate sized software. Practical exercises emphasise the importance of programming practices such as appropriate documentation, systematic approaches to debugging and testing, and the use of software development tools. The unit is taught using Java.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://students.mq.edu.au/important-dates>

Learning Outcomes

On successful completion of this unit, you will be able to:

- ULO1:** explain the key concepts of object oriented programming, and program proficiently in an OO programming language
- ULO2:** apply the concepts underlying software design and a working knowledge of a selection of well known design patterns
- ULO3:** demonstrate good programming practices such as testing, debugging, documentation, version control, programming tools and interactive development environments
- ULO4:** apply key object oriented concepts and libraries to design and develop applications of significant complexity
- ULO5:** apply key concepts of concurrency theoretically and in working code

General Assessment Information

Submission of assessable work

For all your assignments, and for your professional life in the future, you are encouraged to

- set your personal deadline earlier than the official deadline
- keep backups of all your important files
- make sure that no-one else has access to your files or documents

Late work will not be accepted. Develop good working habits and manage your time well. If your contributions are seriously affected by illness or misadventure you do your utmost to submit a request for special consideration **before** the due date, do not email the unit convenor directly.

Assessment Tasks

Name	Weighting	Hurdle	Due
Major Creative Work	60%	No	Weeks 4, 8, 11, and 12
Module Exams	40%	No	Various

Major Creative Work

Assessment Type ¹: Programming Task

Indicative Time on Task ²: 40 hours

Due: **Weeks 4, 8, 11, and 12**

Weighting: **60%**

A semester-long programming task where students put all their skills to work creating a game or demo.

On successful completion you will be able to:

- explain the key concepts of object oriented programming, and program proficiently in an OO programming language
- apply the concepts underlying software design and a working knowledge of a selection of well known design patterns
- demonstrate good programming practices such as testing, debugging, documentation, version control, programming tools and interactive development environments
- apply key object oriented concepts and libraries to design and develop applications of significant complexity
- apply key concepts of concurrency theoretically and in working code

Module Exams

Assessment Type ¹: Examination

Indicative Time on Task ²: 16 hours

Due: **Various**

Weighting: **40%**

A number of exams spread through the semester. Students will have the opportunity to repeat any exam to improve their mark.

On successful completion you will be able to:

- explain the key concepts of object oriented programming, and program proficiently in an OO programming language
- apply the concepts underlying software design and a working knowledge of a selection of well known design patterns
- demonstrate good programming practices such as testing, debugging, documentation, version control, programming tools and interactive development environments
- apply key object oriented concepts and libraries to design and develop applications of significant complexity
- apply key concepts of concurrency theoretically and in working code

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 of COMP2000 has up to two hours of online lectures and a two-hour practical class. For details of days, times and rooms, consult the University timetables webpage (<http://www.time-tables.mq.edu.au>). Practical classes commence in Week 1 and are held in the 4RPD Computer Laboratories computer laboratories for on-campus classes and in zoom rooms for online classes (links published in iLearn).

Students choosing online practicals are expected to have camera, microphone, and screen sharing capabilities for all classes. If you don't have access to those, please choose an on-campus class.

In all cases students are expected to do significant preparatory work, readings and exercises *before* attending classes.

REQUIRED AND RECOMMENDED TEXTS AND/OR MATERIALS

The required text for the unit is (available online via the Macquarie University Library, see below):

- Head First Design Patterns by Eric T Freeman, Elisabeth Robson, Bert Bates and Kathy Sierra, O'Reilly Media, October 2004 (ISBN:978-0-596-00712-6)

There will be no lecture notes provided, all examinable material is given in course readings and

the textbook. Students are required to study this material and answer preparatory questions *before* class.

The Macquarie library contains many books on object-oriented programming in general, and on programming specifically in Java, that you may want to use to supplement the text and lecture notes.

One particularly useful service that the library provides you with is access to many Java related titles online via the Safari Books Online (<http://proquest.safaribooksonline.com/>) service. Using this service, which you can only access from a machine connected to the University network, you might like to have a look at the following Java titles:

1. Head First Design Patterns by Eric T Freeman, Elisabeth Robson, Bert Bates and Kathy Sierra, O'Reilly Media, October 2004 (ISBN:978-0-596-00712-6)
2. Learning Java, 3rd Edition by Jonathan Knudsen; Patrick Niemeyer, ISBN: 978-0-596-00873-4
3. Java in a Nutshell, 5th Edition by David Flanagan, ISBN: 978-0-596-00773-7
4. Java Examples in a Nutshell, 3rd Edition by David Flanagan, ISBN: 978-0-596-00620-4
The web itself is an ideal source of Java information, and from time to time we will be posting useful links on the COMP2000 iLearn site. Two particularly useful resources are:
5. Thinking in Java by Bruce Eckel, a free version of the 3rd edition of this pretty comprehensive book is available for download from <http://www.mindview.net/Books/TIJ/> and its 4th edition, which is updated for use with Java 5 and 6, is available for \$25 from <http://mindview.net/Books/TIJ4>.
6. The official Java Tutorial <http://download.oracle.com/javase/tutorial/> which is a comprehensive resource providing trails covering topics ranging from the basics of Java programming to more advanced subjects like GUI development, Generics, Class Reflection, Sound, Graphics, Network Programming and Concurrency

UNIT WEBPAGE AND TECHNOLOGY USED AND REQUIRED

Online Resources

COMP2000 will make extensive use of the iLearn system for delivery of class materials, discussion boards, real time chat, submission of work and access to marks and feedback. Students should check the iLearn site (<http://ilearn.mq.edu.au>) regularly for unit updates.

Questions and general queries regarding the content of this unit, its tutorials or practicals should be posted to the appropriate discussion board on the COMP2000 iLearn site. In particular, any questions which are of interest to all students in this unit should be posted to one of these discussion boards, so that everyone can benefit from the answers.

Echo360

Audio and screen video recordings of the lectures will be made available online via Echo360. A

link to these recordings will be provided on the iLearn site for this unit

Technology Used and Required

The practical work in this unit involves programming in Java (<https://www.java.com>) using the Microsoft Visual Studio Code IDE (<https://code.visualstudio.com>). We will also be using a distributed version control system called Git to access shared code repositories hosted on the BitBucket website (<https://bitbucket.org>).

This software is already installed for you in the 200 level computing labs (ground floor, 9 Wally's Walk) and it is available to download, install and use for free on your own machine(s). It should work equally well on Mac OSX, Linux or Microsoft Windows platforms.

Tools and libraries to support debugging, automated testing, GUI development and so forth will be introduced and used as the semester progresses. When that occurs you will be provided with full instructions in lectures on how to install and use each one.

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](#)
- [Grade Appeal Policy](#)
- [Complaint Management 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

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/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.