School of Science, Computing and Engineering Technologies

SWINBURNE UNIVERSITY OF TECHNOLOGY

Unit Outline

COS70006

Object-Oriented Programming

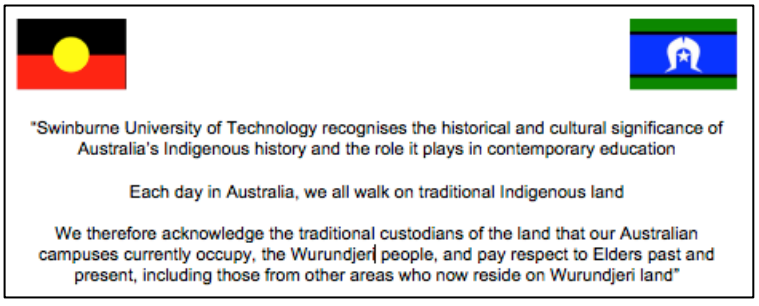
Semester 2 2024

Please read this Unit Outline carefully. It includes:

PART A Unit summary

PART B Your Unit in more detail

PART C Further information



PART A: Unit Summary

Unit Code(s)		COS70006
Unit Title		Object-Oriented Programming
Duration		One semester or equivalent
Total Contact Hours		54 hours
Requisites:		
	Pre-requisites	COS60010 Technology Enquiry Project OR COS60006 Introduction to Programming OR INF60008 Introduction to Programming in .NET OR Admission to MA-ITPC1 Master of Information Technology (Professional Computing)
	Co-requisites	Nil
	Concurrent pre-requisites	Nil
	Anti-requisites	Nil
	Assumed knowledge	Nil
Credit Points		12.5 credit points
Campus/Location		Hawthorn
Mode of Delivery		Face to Face
Assessment Summary		Portfolio (Individual) 30% Project (Individual) 50% Test (Individual) 20%

Aims

This unit of study aims to introduce students to structured programming and design.

Unit Learning Outcomes

Students who successfully complete this unit can:

1. Explain the principles of the object oriented programming paradigm specifically including abstraction, encapsulation, inheritance and polymorphism, and explain how these principles are used to create object oriented programs
2. Design, develop, test, and debug programs using object-oriented principles in conjunction with an integrated development environment
3. Select and use appropriate collection classes, from the languages class library, to manage collections of multiple objects

4. Construct appropriate diagrams and textual descriptions to communicate the static structure and dynamic behaviour of an object-oriented solution
5. Apply accepted good practices related to the construction of object-oriented programs
6. Independently research topics in object-oriented programming and program structure

Graduate Attributes

The Swinburne Graduate Attributes describe the capability of our graduates to use knowledge, skills and behaviours to contribute to society meaningfully and positively. They include professional, self-directed learning and future-ready skills.

This unit contributes to the development of the following Swinburne Graduate Attributes:

- GA1 Communication - Verbal communication: In class demonstration of lab tasks is encouraged.
- GA2 Communication - Communicating using different media: Students will be using various media to complete different tasks for this unit (ex: online tests, in class lab task demonstrations)
- GA3 Teamwork - Collaboration and negotiation: Students are encouraged to discuss lab tasks in class settings before they proceed to implement.
- GA5 Digital literacies– Information literacy: There are some contents which will be delivered online.
- GA6 Digital Literacies– Technical literacy: There are some online contents and programming tasks for the students.

Graduate attributes may be practiced in the unit but are not formally taught as part of the unit content.

Content

- Object oriented programming with Java
- Responsibility driven design
- Software development tools

PART B: Your Unit in more detail

Unit Improvements

Feedback provided by previous students through the Student Survey has resulted in improvements that have been made to this unit. Recent improvements include:

- Lab tasks are revised
- Projects are revised

Unit Teaching Staff

Name	Role	Room	Phone	Email	Consultation Times
Dr Wei Lai	Convenor Lecturer			wlai@swin.edu.au	Listed on Canvas
Dr Shibli Saleheen	Tutor			ssaleheen@swin.edu.au	Listed on Canvas

Learning and Teaching Structure

Category	Activity	Total Hours	Hours per Week	Teaching Period Weeks
In person	Lectures	12 hours	1 hours	Weeks 1 to 12
Online	Self-paced online pre-recorded lectures	12 hours	1 hour	Weeks 1 to 12
In person	Tutorials	24 hours	2 hours	Weeks 1 to 12
Live Online	Workshop	6 hours	2 hours	Weeks 4, 9 and 5, 10

Besides specified learning hours above, you should normally expect to spend, on average, 8 hours per week for independent learning.

Week by Week Schedule

Week	Week Beginning	Teaching and Learning Activity	Student Task or Assessment
1	Jul 29	Unit Overview, Java Basics	Lab work
2	Aug 5	Object and Classes	Lab work
3	Aug 12	Flow of Control	Lab work
4	Aug 19	OOP Principles	Lab work
5	Aug 26	Arrays, Collections and Iterations	Lab work; Test 1
6	Sep 2	UML Class and Sequence Diagram	Project 1
	Sep 9	Mid semester break	

7	Sep 16	Inheritance & Polymorphism	Lab work
8	Sep 23	Abstract classes & Interfaces	Lab work
9	Sep 30	GUI	Lab work
10	Oct 7	Exceptions	Test 2
11	Oct 14	Recursion and Files	Project 2
12	Oct 21	Design Pattern/Revision/Industry Talk	Report

Assessment

a) Assessment Overview

Tasks and Details	Individual or Group	Weighting	Mapped Unit Learning Outcomes	Mapped Graduate Attributes	Assessment Due Date
1. Tests	Individual	20%	2, 3, 4	GA1, GA2, GA5, GA6	Test 1 (10%) - week 5 Test 2 (10%) - week 10
2. Projects	Individual	50%	1, 2, 3, 4, 5, 6	GA1, GA2, GA3, GA5, GA6	Project 1 (25%) - week 6 Project 2 (25%) – week 11
3. Portfolio	Individual	30%	1, 2, 3, 4, 5, 6	GA1, GA2, GA3, GA5, GA6	Weekly Tasks (25%) – weekly Report (5%) – week 12

b) Minimum requirements to pass this unit

To pass this unit, you must:

- achieve an overall mark for the unit of 50% or more

c) Final Assessment Period

If the unit you are enrolled in has a final assessment (including invigilated exams), you will be expected to be available for the entire final assessment period including any Special Exam period.

- There is no examination for this unit.

d) Submission Requirements

Assignments and other assessments are generally submitted online through the Canvas assessment submission system which integrates with the Turnitin plagiarism checking service.

Please ensure you keep a copy of all assessments that are submitted.

In cases where a hard copy submission is required an Assessment Cover Sheet must be submitted with your assignment. The standard Assessment Cover Sheet is available from the Submitting work webpage or www.swinburne.edu.au/studentforms/

The (zipped) soft copy of each assessment should include the source code (a BlueJ Project) and should be submitted to canvas by the due date.

e) Extensions and Late Submission

Extensions must be applied for before the due date by emailing the unit convener, and a medical certificate must be provided at the time of request. No medical certificate, no extension.

Late Submissions - Unless an extension has been approved, late submissions will result in a penalty. You will be penalised 10% of your achieved mark for each working day the task is late, up to a maximum of 5 working days. After 5 working days, a zero result will be recorded.

f) Referencing

To avoid breaching academic integrity, you are required to provide references whenever you include information from other sources in your work and acknowledge when you have used Artificial Intelligence (AI) tools (such as ChatGPT). Further details regarding academic integrity are available in Section C of this document.

Referencing conventions required for this unit are:

a) Where a method has been written by someone other than yourself, place a comment in the documentation for each method acknowledging the source of the code.
b) Where a method is an adaption of work done by someone else, place a comment in the documentation for each method acknowledging the source of the code.
c) For written work
    - Place all phrases, sentences, paragraphs, etc., that have not been written by you in quotation marks.
    - Place a reference to the source of the words in the document.
    - Use Harvard standard for referencing.

Helpful information on referencing can be found at http://www.swinburne.edu.au/library/referencing/

g) Groupwork Guidelines

In this unit, students are encouraged to work on lab work with ONE other student.

However;

- Each student must independently write up and submit their work.
- Where a student cannot explain work submitted, it will be awarded 0 marks.

Required Textbook(s)

The required textbook(s) are available through the Swinburne Library or can be purchased from bookshops.

- Barnes, D.J. and Kolling, M., Objects First With Java – A Practical Introduction Using BlueJ, 5th ed. Prentice Hall / Pearson Education, 2012

Recommended Reading Materials

The Library has a large collection of resource materials. Listed below are some references that will provide valuable supplementary information to this unit. It is also recommended that you explore other sources to broaden your understanding.

- Savitch, W., Absolute Java, 5th edition, Pearson Education, 2013
- Liang, Y.D. (2015), Introduction to Java Programming, 9th ed., Pearson Education. 2015
- Deitel, P. and Deitel, H., Java How to Program, 9th ed., Prentice Hall / Pearson Education, 2011
- Fowler, M. and Scott, K., UML Distilled: A Brief Guide to the Standard Object Modelling Language, 3rd ed. Addison Wesley, 2003
- Barclay,K. and Savage,J., Object-Oriented Design with UML and Java, Elsevier, Butterworth-Heinemann, 2004

PART C: FURTHER INFORMATION

For further information on any of these topics, refer to Swinburne's Student webpage http://www.swinburne.edu.au/student/

Student behaviour and wellbeing

All students are expected to: act with integrity, honesty and fairness; be inclusive, ethical and respectful of others; and appropriately use University resources, information, equipment and facilities. All students are expected to contribute to creating a work and study environment that is safe and free from bullying, violence, discrimination, sexual harassment, vilification and other forms of unacceptable behaviour.

The Student Charter describes what students can reasonably expect from Swinburne in order to enjoy a quality learning experience. The Charter also sets out what is expected of students with regards to your studies and the way you conduct yourself towards other people and property.

You are expected to familiarise yourself with University regulations and policies and are obliged to abide by these, including the Student Academic Misconduct Regulations, Student General Misconduct Regulations and the People, Culture and Integrity Policy. Any student found to be in breach of these may be subject to disciplinary processes.

Examples of expected behaviours are:

- conducting yourself in teaching areas in a manner that is professional and not disruptive to others
- following specific safety procedures in Swinburne laboratories, such as wearing appropriate footwear and safety equipment, not acting in a manner which is dangerous or disruptive (e.g. playing computer games), and not bringing in food or drink
- following emergency and evacuation procedures and following instructions given by staff/wardens in an emergency response

Canvas

You should regularly log on to the Swinburne learning management system, Canvas. You can access Canvas via the Student login webpage or https://swinburne.instructure.com/ Canvas is updated regularly with important unit information and communications.

Communication

All communication will be via your Swinburne email address. If you access your email through a provider other than Swinburne, then it is your responsibility to ensure that your Swinburne email is redirected to your private email address.

Academic Integrity

Academic integrity is about taking responsibility for your learning and submitting work that is honestly your own. It means acknowledging the ideas, contributions and work of others; referencing your sources and acknowledging the use of artificial intelligence tools (such as ChatGPT, DALLE, Midjourney); contributing fairly to group work; and completing tasks, tests and exams without cheating. Artificial intelligence tools should only be used where approved by the Unit Convenor.

Swinburne University uses the Turnitin system, which helps to identify inadequate citations, poor paraphrasing and unoriginal work in assignments that are submitted via Canvas. Your Unit Convenor will provide further details.

Plagiarising, cheating and seeking an unfair advantage in a test, exam or assessment task are all breaches of academic integrity and treated as academic misconduct. Examples of breaches of academic integrity include:

- using the whole or part of computer program written by another person as your own without appropriate acknowledgement
- copying the whole or part of somebody else's work in an assessment, including material from a published work, a website or database, a set of lecture notes, current or past student's work, or any other person's work
- using output from artificial intelligence tools (e.g. ChatGPT) in whole or part without acknowledgement and/or without the approval of the Unit Convenor
- poorly paraphrasing somebody else's work
- using a musical composition or audio, visual, graphic and photographic work created by another without acknowledgment
- using objects, artefacts, costumes or models created by another person and presenting them as your own
- submitting assessments that have been developed by another person or service (paid or unpaid), referred to as contract cheating
- presenting or submitting assignments or other work in conjunction with another person or group of people when that work should be your own independent work.
- enabling others to cheat, including letting another student copy your work or by giving access to a draft or completed assignment.

The penalties for academic misconduct can be severe, ranging from a zero grade for an assessment task through to exclusion from Swinburne.

For further details, see https://www.swinburne.edu.au/student-login/academic-integrity/

Student support

Swinburne offers a range of services and resources to help you complete your studies successfully. Your Unit Convenor or studentHQ can provide information about the study support and other services available for Swinburne students. See https://www.swinburne.edu.au/life-at-swinburne/student-support-services/ for further information.

Special consideration

If your studies have been adversely affected due to serious and unavoidable circumstances outside of your control (e.g. severe illness or unavoidable obligation), you may be able to apply for special consideration (SPC).

Applications for Special Consideration are submitted via the SPC online tool normally no later than 5.00pm on the third working day after the submission/sitting date for the relevant assessment component. See https://www.swinburne.edu.au/life-at-swinburne/student-support-services/special-consideration-assistance/

Accessibility needs

Sometimes students with a disability, a mental health or medical condition or significant carer responsibilities require reasonable adjustments to fully access and participate in education. Swinburne's AccessAbility Services can develop an 'Education Access Plan' that includes the

services and reasonable adjustments that you need. The plan makes recommendations to University teaching and examination staff.

It is recommended that you register with AccessAbility Services within one week after the commencement of your unit to allow the University to make reasonable adjustments.

Review of marks

An independent marker reviews all fail grades for major assessment tasks. In addition, a review of assessment is undertaken if your final result is between 45 and 49 or within 2 marks of any grade threshold.

You can ask the Unit Convenor to check the result for an assessment item or your final result. Your request must be made in writing within 10 working days of receiving the result. The Unit Convenor can discuss the marking criteria with you and check the aggregate marks of assessment components to identify if an error has been made. This is known as local resolution.

If you are dissatisfied with the outcome of the local resolution, you can lodge a formal complaint.

Feedback, complaints and suggestions

In the first instance, discuss any issues with your Unit Convenor. If your concerns are not resolved or you would prefer not to deal with your Unit Convenor, then you can complete a feedback form.

See https://www.swinburne.edu.au/corporate/feedback/

Advocacy

If you require assistance with any academic issues, University statutes, regulations, policies and procedures, you are advised to seek advice from an Independent Advocacy Officer at Swinburne Student Life. Talking to an Advocacy Officer is free, independent and confidential.

For more information and booking an appointment, please see https://www.swinburne.edu.au/current-students/student-services-support/advocacy/