School of Software and Electrical Engineering

SWINBURNE UNIVERSITY OF TECHNOLOGY

Unit Outline

COS20007

Object Oriented Programming

Semester 2 2021

Please read this Unit Outline carefully. It includes:

PART A Unit summary

PART B Your Unit in more detail

PART C Further information

"Swinburne University of Technology recognises the historical and cultural significance of Australia's Indigenous history and the role it plays in contemporary education

Each day in Australia, we all walk on traditional Indigenous land

We therefore acknowledge the traditional custodians of the land that our Australian campuses currently occupy, the Wurundjeri people, and pay respect to Elders past and present, including those from other areas who now reside on Wurundjeri land"

PART A: Unit Summary

Unit Code(s)		COS20007
Unit Title		Object Oriented Programming
Duration		One semester or equivalent
Total Contact Hours		48 hours
Requisites:		
	Pre-requisites	COS10009 Introduction to Programming OR SWE20004 Technical Software Development OR COS10001 Algorithmic Problem Solving OR INF10016 Introduction to Programming in .NET
	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) 100% Test (Individual) 0%

Aims

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

Unit Learning Outcomes

Students who successfully complete this Unit should be able to:

1 Explain the principles of the object oriented programming paradigm specifically including abstraction, encapsulation, inheritance and polymorphism (K2,K6,A2)

2 Use an object oriented programming language, and associated class libraries, to develop object oriented programs (K1,K3,S1)

3 Design, develop, test, and debug programs using object-oriented principles in conjuncture with an integrated development environment (K2,K6,S1,S2,S3)

4 Construct appropriate diagrams and textual descriptions to communicate the static structure and dynamic behaviour of an object-oriented solution (K6,A2)

5 Describe and explain the factors that contribute to a good object oriented solution, reflecting on your own experiences and drawing upon accepted good practices (K6,A2)

Graduate Attributes

This unit may contribute to the development of the following Swinburne Graduate Attributes:

- Communication skills
- Teamwork skills
- Digital literacies

Content

- Designing, writing, compiling, documenting, and testing programs
- Programming language syntax
- Structured programming principles
- Functional decomposition

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:

- Asynchronous lectures to avoid significant timetable clashes
- Additional supporting videos
- Use of Discord for the programming help desk
- Extra Q&A and demonstration time in weekly “Live Online” sessions

Unit Teaching Staff

Name	Role	Room	Phone	Email	Consultation Times
Charlotte Pierce	Convenor	EN513a	9214 8148	cpierce@swin.edu.au	See Canvas.
Shamara Gibson	Tutor	N/A	N/A	rgibson@swin.edu.au	See Canvas.
Quoc Tien Pham	Tutor	N/A	N/A	qtpham@swin.edu.au	See Canvas.
Joshua Wright	Tutor	N/A	N/A	joshuawright@swin.edu.au	See Canvas.
Matthew Noone	Tutor	N/A	N/A	mnoone@swin.edu.au	See Canvas.
Olivia McKeon	Tutor	N/A	N/A	omckeon@swin.edu.au	See Canvas.
Michael Kenny	Tutor	N/A	N/A	TBD	See Canvas.

Learning and Teaching Structure

Activity	Total Hours	Hours per Week	Teaching Period Weeks
Lectures	24 hours*	2 hours	Weeks 1 to 12
Tutorials	12 hours	2 hour	Weeks 1 to 12
Test	6 hours	6 hours	Week 8

* Not all lectures will take the full 2 hours. Remaining time will be used for individual/group consultation and discussion.

Week by Week Provisional Schedule

Week	Week Beginning	Teaching and Learning Activity	Student Task or Assessment	
1	August 2	Lecture and Tutorial: Unit Overview and Introducing Objects	Complete weekly tasks Submit task progress for feedback and signoff	
2	August 9	Lecture and Tutorial: Using Framework Classes		
3	August 16	Lecture and Tutorial: Object Collaboration		
4	August 23	Lecture and Tutorial: Inheritance and Polymorphism		
5	August 30	Lecture and Tutorial: Delegation and Exceptions		
6	September 6	Lecture and Tutorial: OO Design and UML Mid-semester break No classes: April 1 - 7		
		Mid-semester break No classes: September 13 - 19		
7	September 20	Lecture and Tutorial: Reviewing OO Principals		
8	September 27	Lecture and Tutorial: Elements of Good OO Design		Semester Test
9	October 4	Lecture and Tutorial: C# Language		
10	October 11	Lecture and Tutorial: Other Languages		
11	October 18	Lecture and Tutorial: Event-Driven Programming		
12	October 25	Lecture and Tutorial: What Next?		
	Nov 5	*Exam Period*	Portfolios due November 5th (Interviews week of November 8th)	

Assessment

- **Assessment Overview**

Tasks and Details	Individual or Group	Weighting	Relevant Unit Learning Outcomes	Assessment Due Date
1. Semester Test	Individual	Pass / Fail	All	Week 8
2. Portfolio (for Pass and Credit)	Individual	100%	All	Friday November 5th, 5pm
3. Portfolio and Interview (for Distinction and High Distinction)	Individual	100%	All	Week of November 8th (subject to change)

- **Minimum requirements to pass this Unit**

  In order to achieve a pass in this unit of study, you must
  - either pass the Semester Test or, if the Test is marked as Fix, make the required corrections correctly before portfolio submission;
  - submit a Portfolio that meets the minimum set of criteria for passing this unit of study as outlined in the Portfolio Format and Assessment Criteria document.

- **Examinations**

  If the unit you are enrolled in has an official examination, you will be expected to be available for the entire examination period including any Special Exam period.

- **Submission Requirements**

  Weekly formative assessment tasks are submitted online via Doubtfire.

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

  This unit uses portfolio assessment to determine your final grade. Portfolios must be generated on Doubtfire and incorporate your completed tasks.

  Refer to the **COS20007 Object Oriented Programming Portfolio Format and Assessment Criteria** document for detailed assessment criteria.

- **Extensions and Late Submission**

  Late Submissions - Unless an extension has been approved, submitting an assessment after the due date/time is not permitted.

- **Referencing**

  To avoid plagiarism, you are required to provide a reference whenever you include information from other sources in your work. Further details regarding plagiarism are available in Section C of this document.

  Referencing conventions required for this unit are: [Insert referencing convention]

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

Required Textbook(s)

The required textbook(s) are available from Swinburne Bookshop: http://bookshop.swin.edu.au

No required textbook.

Recommended Reading Materials

The Library has a large collection of resource materials, both texts and current journals. 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.

- Lecture notes can be downloaded from the Canvas web site. These include details on the material you will need to read each week, as well as exercises for you to undertake. The exercises from these notes are to be submitted as the weekly exercises assignments as noted above.
- Textbooks:
  - Budd, *An Introduction to Object Oriented Programming*, Addison-Wesley, 2002
  - Wirfs-Brock & McKean, *Object Design: Roles, Responsibilities, and Collaboration*, Addison-Wesley, 2002
  - Gamma et al, *Design Patterns: Elements Of Reusable Object-oriented Software*, Addison-Wesley, 1994

PART C: FURTHER INFORMATION

For further information on any of these topics, refer to Swinburne's Current Students web page 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 access the Swinburne learning management system, Canvas, which is available via the Current Students 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; contributing fairly to group work; and completing tasks, tests and exams without cheating.

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 with regards to an exam or assessment are all breaches of academic integrity and treated as academic misconduct.

Plagiarism is submitting or presenting someone else's work as though it is your own without full and appropriate acknowledgement of their ideas and work. Examples include:

- using the whole or part of computer program written by another person as your own

- using the whole or part of somebody else's written work in an essay or other assessable work, including material from a book, journal, newspaper article, a website or database, a set of lecture notes, current or past student's work, or any other person's work
- poorly paraphrasing somebody else's work
- using a musical composition or audio, visual, graphic and photographic work created by another
- using realia created by another person, such as objects, artefacts, costumes, models
- submitting assessments that have been developed by another person or service (paid or unpaid), often 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. This is regardless of whether or not it is with the knowledge or consent of the other person(s). Swinburne encourages students to talk to staff, fellow students and other people who may be able to contribute to a student's academic work but where an independent assignment is required, the work must be the student's own
- enabling others to plagiarise or 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 expulsion from the unit and, in the extreme, exclusion from Swinburne.

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.

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 will be 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.

Accessibility needs

Sometimes students with a disability, a mental health or medical condition or significant carer responsibilities require reasonable adjustments to enable full access to and participation in education. Your needs can be addressed by Swinburne's AccessAbility Services by negotiating and distributing an 'Education Access Plan'. The plan makes recommendations to university teaching and examination staff. You must notify AccessAbility Services of your disability or condition 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.

If you are not satisfied with the result of an assessment, you can ask the Unit Convenor to review the result. Your request must be made in writing within 10 working days of receiving the result. The Unit Convenor will review your result to determine if your result is appropriate.

If you are dissatisfied with the outcomes of the review, you can lodge a formal complaint.

Feedback, complaints and suggestions

In the first instance, discuss any issues with your Unit Convenor. If you are dissatisfied with the outcome of the discussion or 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

Should 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.

For an appointment, please call 03 9214 5445 or email advocacy@swin.edu.au For more information, please see https://www.swinburne.edu.au/current-students/student-services-support/advocacy/