School of Science, Computing and Engineering Technologies

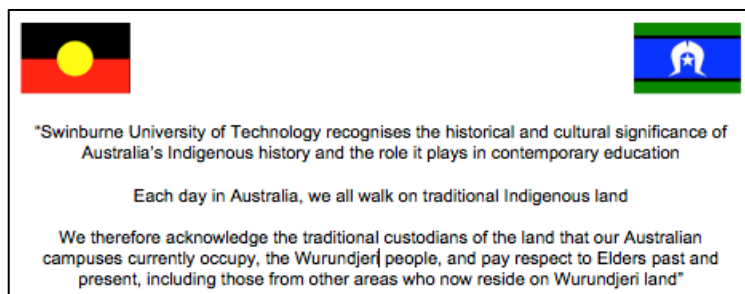# Unit Outline

SWE40001

Software Engineering Project A

Semester 1, 2023

Note that the <u>lectures</u> are to be conducted live online via <u>Canvas/Collaborate-Ultra</u>.

In general, <u>project meetings</u> in project teams (with or without the project supervisor, or with the client) may be conducted on campus (eg, in the library), on client site or online, with agreement from all involved.

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)		SWE40001
Unit Title		Software Engineering Project A
Duration		1 Semester
Total Contact Hours		48
Requisites:		
	Pre-requisites	COS20007 Object Oriented Programming OR SWE20004 Technical Software Development OR COS30014 Object Oriented Programming in C++ *
	Co-requisites	SWE30010 Managing IT Projects OR INF30029 Information Technology Project Management OR SWE20003 Software Project Practices and Management * OR MME40001 Engineering Management 2 OR SWE20001 Managing Software Projects
	Concurrent pre-requisites	NIL
	Anti-requisites	COS30021 Software Development Project 1
	Assumed knowledge	NIL

Credit Points	12.5
Campus/Location	Hawthorn
Mode of Delivery	Lectures, Project Meetings
Assessment Summary	This Unit of Study forms the first half of the two-semester Capstone project. Projects will continue into Semester 2 under the same team and supervisory arrangements established in Semester 1.

Students will be assessed on the basis of a portfolio, consisting of participation, effective contribution, documentation, development, process and product.

As the minimum requirements of assessment to pass the unit and meet all Unit Learning Outcomes to a minimum standard, a student must achieve: An aggregate mark for the unit of 50% or more. |

Aims

Students will consolidate and build on skills and knowledge gained in previous related studies and team work and apply these to a practical application and/or research project. Students will also present results and/or findings in a substantial piece of work.

Unit Learning Outcomes

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

1. Apply professional practice, including active and consistent participation, delivery of technical presentations, reflection, and adherence to ethical codes of conduct as a member of a software development team [K3, K6, A1, A2, and A5]

2. Apply software engineering methods and contemporary software development tools to the scoping, analysis, and design of a software system to meet client needs [K4, K5, S1, S2, S3, and A4]

3. Communicate proficiently with project stakeholders, and function as an effective member or leader of a development team in project scoping, analysis and design activities [S2, S3, A2, and A7]

4. Conduct a critical analysis and evaluation of aspects relevant to a software development project and justify implications for project directions [S4, A5, and A6]

Graduate Attributes

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

- Communication 1 - Verbal communication
- Communication 2 - Communicating using different media
- Teamwork 1 - Collaboration and negotiation

- Teamwork 2 - Teamwork roles and processes
- Digital literacies 1 – Information literacy
- Digital Literacies 2 – Technical literacy

Content

- Communication skills in dealing with clients and colleagues
- (Object-Oriented) Analysis and requirements gathering
- (Object-Oriented) Design
- Software process
- Quality assurance via process
- Test planning, execution and record-keeping
- Working to standards
- Technical documentation
- Version control
- 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:
- Revision of the supporting lecture material
- Inclusion of client feedback as part of the assessment
- Inclusion of better tools to assess individual contribution

Unit Teaching Staff

Name	Role	Room	Phone	Email	Consultation Time
Prof Jun Han	Unit Convenor, Lecturer	EN507b	9214 5732	jhan@swin.edu.au	by email appointment
Dr Caslon Chua	Capstone Projects Manager	EN506e	9214 5397	cchua@swin.edu.au	by email appointment
Dr Huai Liu	Moderator			hliu@swin.edu.au	

Learning and Teaching Structure

Activity	Total Hours	Hours per Week	Teaching Period Weeks
Lectures, Reviews and Presentations	24	2	Weeks 1 to 12
Supervisor Meetings	12	1	
Team Meetings	12	1	
Project Work	102	8.5 minimum	

The "Project Work" and "Team Meeting" activities may require more time during some weeks of the semester and less in others. Students are advised to plan the work in this Unit of Study based on time commitments in other Units of Study.

Week by Week Schedule

The following schedule is provisional and some of the lecture topics may change subject to availability of guest lecturers and the needs of the subject.

Week	Week Beginning	Teaching and Learning Activity	Student Task or Assessment
1	February 27	Introduction	
2	March 6	Requirements Analysis	
3	March 13	Preparing for Leadership	
4	March 20	Process and Quality	
5	March 27	System Requirements and Design	
6	April 3	Project Status Review/Team Leaders Forum	Mid Semester Peer Reviews
		Apr 6-12: Mid-Semester Break	
7	April 17	To be advised	
8	April 24	Developing Presentations	
9	May 2	To be advised	
10	May 9	To be advised	
11	May 16	To be advised	
12	May 23	Team Presentations (3)	Semester End Peer Reviews

Assessment

a) Assessment Overview

Tasks and Details	Individual or Group	Weighting	Unit Learning Outcomes that this assessment task relates to
Portfolio consisting of: ▪ Project Reports ▪ Project Presentations ▪ Product ▪ Team participation Completed in groups.	**Individual and Group**	**100%**	**1,2,3,4**

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) Examinations

There is no formal examination in this Unit of Study.

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/

e) Extensions and Late Submission

Extensions to assessable items will only be granted in exceptional circumstances on medical or compassionate grounds. Extensions must be applied for in advance of the assessable item's due date and the convener of this Unit of Study must approve the extension in writing.

Where submissions are group submissions no extensions will be granted.

Late Submissions: unless an extension has been explicitly granted by the Unit of Study convener, you cannot submit an assessable item after the due date. If this does occur, you will be penalised 10% of the assessments worth for each calendar day the task is late – up to a maximum of 5 days. After 5 days a zero result will be recorded. Feedback or comments from the marker will generally not be available on assignments that are submitted after five working days past the published deadline.

f) 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 under 'Academic Integrity'.

Referencing conventions for assessable documents are to be negotiated with the project supervisor in advance.

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

g) Groupwork Guidelines

A group assignment is the collective responsibility of the entire group, and if one member is temporarily unable to contribute, the group should be able to reallocate responsibilities to keep to schedule. In the event of longer-term illness or other serious problems involving a member of group, it is the responsibility of the other members to immediately notify the Unit Convenor or relevant tutor / supervisor.

Group submissions must be submitted with an Assignment Cover Sheet, signed by all members of the group.

All group members must be satisfied that the work has been correctly submitted. Any penalties for late submission will generally apply to all group members, not just the person who submitted.

Students are encouraged to use unallocated time between the lecture and tutorial for assignment work with their group!

Required Textbook(s)

There is no required text book for this Unit of Study.

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.

- Soren Lauesen, *Software Requirements: Styles and Techniques*, Addison-Wesley, 2002

- Len Bass, Paul Clements, and Rick Kazman, *Software Architecture in Practice* (3rd Edition), Addison-Wesley, 2013
  Please note that the 2nd edition is available electronically through the Swinburne library.

- David Budgen, *Software Design* (2nd Edition), Addison-Wesley, 2003

- Eric Evans, *Domain-Driven Design*, Addison-Wesley, 2003

- Erich Gamma, Richard Helm, Ralph Johnson and John Vlissides, *Design Patterns*, Addison-Wesley, 1995

- Ian Sommerville, *Software Engineering* (8th Edition), Addison-Wesley, August 2007

- Bob Hughes and Mike Cotterell, *Software Project Management* (5th Edition), McGraw-Hill, 2009.

- Jim Highsmith, *Agile Project Management – Creating Innovative Projects*, Addison-Wesley, 2009.

- Ken Schwaber and Mike Beedle, *Agile Software Development with SCRUM*, Prentice Hall, 2001.

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 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.

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

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/