School of Science, Engineering and Technology
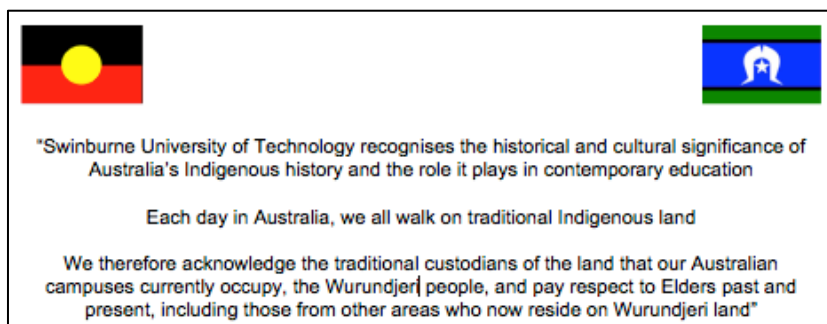
Unit Outline

COS20031

Database Design Project

Semester 1 2025

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)	COS20031
Unit Title	Database Design Project
Duration	One Semester or equivalent
Total Contact Hours	36
Requisites:	
Pre-requisites	COS10009 Introduction to Programming OR COS10005 Web Development OR COS10026 Computing Technology Inquiry Project
Co-requisites	Nil
Concurrent pre-requisites	Nil
Anti-requisites	Nil
Assumed knowledge	Nil
Credit Points	12.5
Campus/Location	Hawthorn
Mode of Delivery	Blended
Assessment Summary	Individual/Group deliverables

Aims

This unit of study takes a project-based approach to a technical challenge provided by an external partner. Students apply design thinking to a data-focussed project. Students develop skills in their major discipline while working in a practical context with ethical, interpersonal and professional considerations typical for workplace environments.

Unit Learning Outcomes

Students who successfully complete this unit can:
1. Acquire basic knowledge independently about the selection of suitable database technology as well as the design of databases according to relational and NoSQL principles.
2. Design and implement a project plan using industry standard project management and collaboration tools.
3. Apply ethical, professional and technical considerations in the development of a database solution for a stakeholder.
4. Effectively discuss database storage solutions, alternative options and data storage and access requirements with stakeholders including issues such as data privacy and security.
5. Design and implement a database solution for a given purpose, including data access and manipulation as well as data privacy and security, according to project specifications in a team.
6. Contribute to the project development as a respectful and responsible team member.

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
- GA3 Teamwork - Collaboration and negotiation

Other graduate attributes may be practised in the unit but are not formally taught as part of the unit content, nor incorporated within formal assessment.

Content

- Decision making

- Team management and collaboration tools

- Database design

- Data storage and management including challenges such as privacy and security

- Professional and research ethics

- Professional communication, including constructive feedback

- Developing an inclusive and safe team culture

- Major specific content as determined by Project

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:
- Classes scheduled such that a student only has to come to campus once per week
- Introducing the project brief in week 2 to give students the opportunity for an early start

Unit Teaching Staff

Name	Role	Room	Email / Teams	Consultation Times
Irene Moser	Unit Convenor	EN504	imoser@swin.edu.au	By app
Afzaal Hassan	Tutor	-	afzaalhassan@swin.edu.au	
Ahmed Husnain Shahid	Tutor	-	ashahid@swin.edu.au	
Areeba Kazim	Tutor	-	akazim@swin.edu.au	
Jenny Lai	Tutor	-	jlai@swin.edu.au	
Kalpana Nanayakkara	Tutor	-	pnanayakkara@swin.edu.au	
Wendy Ha	Tutor	-	wendyha.sut@gmail.com	

Learning and Teaching Structure

Category	Activity	Total Hours	Hours per Week	Teaching Period Weeks
Live Online	Lectures	12 hours	1 hour	Weeks 1 to 12
In person	Tutorial - 1 hour tutorial - 1 hour workshop	24 hours	2 hour	Weeks 1 to 12
Online	Self-paced online learning activities	12 hours	1 hour	Weeks 1 to 12

Week by Week Schedule

Week	Week Beginning	Teaching and Learning Activity	Student Task or Assessment
1	3 Mar	Team building, Confluence	Preparing team agreement
2	10 Mar	Project proposal, Project planning and scoping, Risk management	Preparing project proposal
3	17 Mar	Relational modelling principles	Drawing database structure
4	24 Mar	Requirements gathering, mission statement, conceptual data model	Defining requirements, goals Developing draft model **Project proposal due**
5	31 Mar	Normalisation	Applying normalisation to project, Project/team management **Individual assessment 1 due**
6	7 Apr	Getting started with DBMS; Implementing design in DBMS	Translating project design into physical design; Project/team management **Individual assessment 2 due**
Easter Break			
7	14 Apr	Data preparation and loading/data generation tools	Populating database; Project/team management **Progress Report due**
8	28 Apr	Queries and Transactions	Implementing use cases; Project/team management
9	5 May	Performance: Indexes and their appraisal	Adding indexes to project database; Project/team management **Individual assessment 3 due**
10	12 May	Major-specific work	Specialised enhancements of database solutions; Project/team management **Individual assessment 4 due**
11	19 May	Major-specific work/Finalising work on project, documentation and presentation video	Major specific additions in project repository
12	26 May	Finalising work on project, documentation and presentation video	**Project deliverable and documentation due** **Individual assessment 5 due**

Assessment

a) Assessment overview

[List assessment tasks. These must be consistent with the accredited Unit Details in Atlas]

Tasks and Details	Individual or Group	Weighting	Mapped Unit Learning Outcomes	Mapped Graduate Attributes	Assessment Due Date
1. Portfolio	Group	60%	1,2,3,4,5,6	GA1, GA3	Weeks 1 - 12
2. Portfolio	Individual	40%	1,3,5	GA1	Weeks 4 - 10

Assessment Requirements	Details
b) Use of generative AI (genAI) in this unit	The assessment should be completed entirely without AI assistance.
c) Hurdle requirements	To pass this unit, you must: (i) achieve an overall mark for the unit of 50% or more, and (ii) work in a team to complete the project to an acceptable standard. Rubrics will be used to determine if students have met the acceptable standard. The rubrics are available on Canvas. Students who do not successfully achieve hurdle requirement (ii) in full, will receive a maximum of 45% as the total mark for the unit
d) Final assessment period	This unit has no after-semester assessments except in cases of special consideration, last-to-complete or other exceptional circumstances, where an alternative assessment in the form of a special exam may be applied. In such an exceptional case, you will be expected to be available for the entire final assessment period including any Special Exam period.
e) Submission requirements	Assignments and other assessments are submitted online through the Canvas assessment submission system which integrates with Turnitin. All due dates and submission instructions are on Canvas. 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/
f) Extensions and late submissions	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.

		Extensions for reasons of illness or similar that exceed two days have to be submitted as a special consideration application with documentation. Up to two days can be granted by the convenor. Contact by e-mail, imoser@swin.edu.au
g)	**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: APA-style referencing Helpful information on referencing can be found at http://www.swinburne.edu.au/library/referencing/
h)	**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 notify immediately the Unit Convenor or relevant tutor. 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.

Required Textbook(s)

The required textbook(s) can be purchased from bookshops and may be available through the Swinburne Library or.
No textbook

Recommended Reading Materials

Swinburne Library has a large collection of resources. 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.

Connolly & Begg, Database Systems, https://archive.org/details/DatabaseSystemsChegg

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 generative artificial intelligence;

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.

Plagiarism, collusion, contract cheating, unauthorised file sharing, falsification, fabrication, manipulation or misrepresentation of information, reuse of previous work and non-compliance with instructions in an invigilated or non-invigilated assessment item are all breaches of academic integrity and treated as academic misconduct. Examples of breaches of academic integrity include, but are not limited to:

- submitting work as your own for assessment that has been fully or partially completed by a third party, either paid or unpaid
- using output from artificial intelligence tools (e.g. ChatGPT) in whole or part without acknowledgement and/or without the approval of the Unit Convenor
- using another person's work or ideas as though it is your own work, without appropriate attribution
- working closely with another student or group of students (either past or current), to submit for assessment, some or all of the other student or students' work as your own work
- sharing without permission of the Unit Convenor, Swinburne resources or other material related to assessment to an entity or document repository site
- creating, intentionally modifying or inventing information that is intended to be submitted as part of an assessment item
- using the whole or part of a computer program written by another person as your own without appropriate acknowledgement
- poorly paraphrasing somebody else's work
- using a musical composition or audio, visual, graphic and photographic work created by another person without acknowledgment
- enabling others to cheat, including letting another student copy your work or by giving access to a draft or completed assignment
- letting someone or something else impersonate you, or you impersonate someone else in an invigilated or non-invigilated assessment item
- accessing, obtaining and/or providing to others unauthorised materials relating to an invigilated or non-invigilated assessment item.

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. For further information, see the Current students web page.

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/

Note: Submitting fraudulent (fake or altered) medical certificates is considered misconduct and can lead to serious penalties from Swinburne. In addition, your doctor may report fraudulent medical certificates as a prosecutable offence under the Victorian Crimes Act.

AccessAbility Services

If you are a student with a disability, medical or mental health condition or you have significant carer responsibilities, you may require reasonable adjustments to fully access and participate in education. Swinburne's AccessAbility Services can develop an Education Access Plan (EAP) that includes the services and reasonable adjustments that you need.

It is recommended that you register with AccessAbility Services when you first commence your course but you can contact the service at any time during your studies to find out about reasonable adjustments. Contact Accessibility Services to discuss further.

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 the Swinburne Student Association. 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/