COMP1350

Introduction to Database Design and Management

Session 1, In person-scheduled-weekday, North Ryde 2025

School of Computing

Contents

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General Information

Unit convenor and teaching staff
Frances Louise
frances.louise@mq.edu.au
Contact via To be announced on iLearn
To be announced on iLearn

Lecturer
Carl Svensson
carl.svensson@mq.edu.au
Contact via To be announced on iLearn
To be announced on iLearn

Credit points
10

Prerequisites

Corequisites

Co-badged status

Unit description
This unit introduces students to the principles and concepts of data storage, modelling and management with an emphasis on the role of data and information in organisations. The unit will cover conceptual modelling techniques, converting conceptual data models into relational data models and verifying its structural characteristics with normalisation techniques, and implementing and utilising a relational database using a database-management system. Fundamental data modelling techniques such as ER Modelling and query languages such as Structured Query Language (SQL) will be used. Concepts relating to data warehousing, governance, administration, security and privacy, ethical and green approaches to the collection, backup, use and storage of data and the construction of systems are also discussed. Overall, this unit concentrates upon building a firm foundation in information representation, organisation and storage with particular emphasis upon the application of database systems.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at https://www.mq.edu.au/study/calendar-of-dates

Learning Outcomes

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

ULO1: Analyse data requirements and design and develop conceptual database models.

ULO2: Implement system models into databases, design and create simple databases for business information systems and write programs to produce interactive queries.

ULO3: Use data analysis and data modelling techniques and tools for introductory level database design and specification

ULO4: Explain the role and nature of ethics and sustainability in the IT environment related to databases

General Assessment Information

We strongly encourage all students to participate actively in all learning activities. Regular engagement is crucial for your success in this unit, as these activities provide opportunities to deepen your understanding of the material, collaborate with peers, and receive valuable feedback from instructors to assist in completing the unit assessments. Your active participation enhances your learning experience and contributes to a vibrant and dynamic learning environment for everyone.

Assessment Information

Database Design Group Project

This is a group assignment to be submitted on iLearn. Students must work in groups to complete it. If it is submitted late, the entire group will be penalised unless special consideration applies.

Skill Exercise

This is an individual assessment held and invigilated during the practical class for which you are registered.

Final Exam

This is an individual formal examination that will be conducted on campus and invigilated. The time and place will be published on https://iexams.mq.edu.au/ closer to the date.

Release Dates

- Database Design Group Project: to be released no later than week 2

- Skill Exercise: information and sample questions are to be released no later than week 8

- Final Exam: information and sample questions are to be released no later than week 13

Requirements to Pass this Unit

To pass this unit, you must:

- Attempt all assessments, and
- Achieve a total mark equal to or greater than 50%.

Late Assessment Submission Penalty

Unless a Special Consideration request has been submitted and approved, a 5% penalty (of the total possible mark of the task) will be applied for each day a written report or presentation assessment is not submitted, up until the 7th day (including weekends). After the 7th day, a grade of '0' will be awarded even if the assessment is submitted. The submission time for all uploaded assessments is 11:55 pm. A 1-hour grace period will be provided to students who experience a technical concern. For any late submission of time-sensitive tasks, such as scheduled tests/exams, performance assessments/presentations, and/or scheduled practical assessments/labs, please apply for Special Consideration. Assessments where Late Submissions will be accepted

- Database Design Group Project – YES, Standard Late Penalty applies
- Skills Exercise - NO, unless Special Consideration is Granted
- Final Exam - NO, unless Special Consideration is Granted

Special Consideration

The Special Consideration Policy aims to support students who have been impacted by short-term circumstances or events that are serious, unavoidable, and significantly disruptive and may affect their performance in assessment. If you experience circumstances or events that affect your ability to complete the assessments in this unit on time, please inform the convenor and submit a Special Consideration request through https://connect.mq.edu.au.

Assessment Tasks

Name	Weighting	Hurdle	Due
Database Design Group Project	30%	No	Friday, 11/04/2025 11:55 PM
Skills Exercise	20%	No	In week 10, during registered Practical class
Final Exam	50%	No	Exam Period

Database Design Group Project

Assessment Type [1]: Project
Indicative Time on Task [2]: 25 hours
Due: **Friday, 11/04/2025 11:55 PM**
Weighting: **30%**

This is a group assignment. It involves designing a database using a top-down approach. You will be assessed based on the development of an entity-relationship diagram, logical transformation for a given problem description, and planning of the physical design.

On successful completion you will be able to:

• Analyse data requirements and design and develop conceptual database models.

• Implement system models into databases, design and create simple databases for business information systems and write programs to produce interactive queries.

• Use data analysis and data modelling techniques and tools for introductory level database design and specification

Skills Exercise

Assessment Type [1]: Programming Task
Indicative Time on Task [2]: 20 hours
Due: **In week 10, during registered Practical class**
Weighting: **20%**

This assessment is an individual SQL practical skill. This assessment will involve executing database queries to demonstrate the knowledge of SQL. You will be assessed based on the successful execution of SQL queries for given problem statements.

On successful completion you will be able to:

• Implement system models into databases, design and create simple databases for business information systems and write programs to produce interactive queries.

Final Exam

Assessment Type [1]: Examination
Indicative Time on Task [2]: 25 hours
Due: **Exam Period**

Weighting: **50%**

This test will assess your overall knowledge of the database design process and practices, database implementation and usage, as well as other database-related concepts.

On successful completion you will be able to:

- Analyse data requirements and design and develop conceptual database models.
- Implement system models into databases, design and create simple databases for business information systems and write programs to produce interactive queries.
- Use data analysis and data modelling techniques and tools for introductory level database design and specification
- Explain the role and nature of ethics and sustainability in the IT environment related to databases

[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 Writing Centre 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, you should engage and participate in:

- a two-hour lecture
- a two-hour practical

For details of days, times and rooms consult your personal timetable.

Week 1 Classes

Note that both the lecture and practical classes commence in week 1.

Methods of Communication

We will communicate with you via your university email and through announcements on iLearn.

Queries to convenors can sent to the unit convenor via the contact email on iLearn.

Texts and Materials

Notes are available each week on iLearn, but they are intended as an outline of the lecture only and are not a substitute for your own notes or reading of any textbook or other additional material.

Unit Schedule

Topics:

- Introduction to database
- Database design and modelling
    ◦ Conceptual modelling
    ◦ Logical transformation
    ◦ Physical modelling
- SQL coding
- Normalisation
- Database applications and ethics
- Advanced database topics

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (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
- Assessment Procedure
- Complaints Resolution 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). 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) 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 connect.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Academic Integrity

At Macquarie, we believe academic integrity – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free online writing and maths support, academic skills development and wellbeing consultations.

Student Support

Macquarie University provides a range of support services for students. For details, visit http://students.mq.edu.au/support/

The Writing Centre

The Writing Centre provides resources to develop your English language proficiency, academic writing, and communication skills.

- Workshops
- Chat with a WriteWISE peer writing leader
- Access StudyWISE
- Upload an assignment to Studiosity
- Complete the 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 Services and Support

Macquarie University offers a range of Student Support Services including:

- IT Support
- Accessibility and disability support with study

- Mental health support
- Safety support to respond to bullying, harassment, sexual harassment and sexual assault
- Social support including information about finances, tenancy and legal issues
- Student Advocacy provides independent advice on MQ policies, procedures, and processes

Student Enquiries

Got a question? Ask us via the Service Connect Portal, or contact Service Connect.

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.

Changes from Previous Offering

To enable students more time to focus on learning, understanding and reflecting on the content of our unit, we have revised the assessment structure as follows. There are now only three assessments: a skills assessment, a group project, and a final exam. Although no marks are associated with attendance, all activities provide you with key content designed to help you understand the content and complete the assessments.

Unit information based on version 2025.04 of the Handbook