



# COMP1350

## Introduction to Database Design and Management

Session 2, In person-scheduled-weekday, North Ryde 2023

*School of Computing*

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#### **Disclaimer**

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## General Information

Unit convenor and teaching staff

Convenor and Lecturer

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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

### Assessments Information

Workshop Participation:

To receive a workshop participation mark for the week, you will need to do the following:

1. Participate in the workshop for the week **AND**
2. Attempt the quiz which will be open from Tuesday 9 am to Tuesday 9 am, the following week, and a score of at least 0.4/1.

### Assignment-1

This will be a take-home assessment and the submission will be on a Turnitin link.

### Assignment-2

Out of the 20% for the assessment-2,

- ~~40%~~ 5% is for submission
- ~~40%~~ 15% for the Viva
- Viva will be held in the registered workshops. If you do not participate in the viva, you will not be provided marks for the submitted work either.

### Diagnostic Quiz and Module Exams

These assessments will be held in your enrolled workshops on iLearn quizzes. They are closed-book tests.

## Requirements to Pass

To pass this unit you must:

- Achieve a total mark equal to or greater than 50%, and
- Participate in, and undertake all hurdle activities for a minimum of 8 weeks (score 8/13)

## Hurdle Assessments

### Workshop Participation

The development of knowledge and skills to design and develop databases requires continual practice at authentic problems in a practical setting. This unit has weekly practical/SGTA classes and you must demonstrate your progress in developing knowledge and skills in a minimum of 8 of the 13 classes. This is a hurdle assessment meaning that failure to meet this requirement may result in a fail grade for the unit. Students are permitted up to three absences: additional absences will require approval of Special Consideration (see below).

### 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 In this unit, late submissions will be accepted as follows

- Assignment One – YES, Standard Late Penalty applies
- Assignment Two – YES, Standard Late Penalty applies
- Workshop Participation - NO, unless Special Consideration is Granted
- Diagnostic Quiz - NO, unless Special Consideration is Granted
- Module Exams - 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 which may affect their performance in assessment.

**Written Assessments:** If you experience circumstances or events that affect your ability to complete the written assessments in this unit on time, please submit a Special Consideration request through [ask.mq.edu.au](http://ask.mq.edu.au).

**Quiz/Module Exams:** If you miss the weekly practical class during the week of a quiz/exam due to serious, unavoidable and significant disruption, contact your convenor ASAP as you may be able to attend another class that week. If it is not possible to attend another class, please submit a Special Consideration request through [ask.mq.edu.au](http://ask.mq.edu.au).

**Workshop Participation:** To pass the unit you need to demonstrate ongoing development of skills and application of knowledge in 8 out of 13 of the weekly practical classes. If you miss a weekly practical class due to a serious, unavoidable and significant disruption, contact your convenor ASAP as you may be able to attend another class that week. If it is not possible to attend another class, you should still access the class material and review it in your own time and attempt the quiz.

**Note that a Special Consideration should only be applied if you miss more than three of the weekly practical classes.**

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Workshop Participation</a>	5%	Yes	Weeks 1-13
<a href="#">Diagnostic Quiz</a>	5%	No	Week 3
<a href="#">Assignment One</a>	20%	No	Week 6
<a href="#">Assignment Two</a>	20%	No	Week 10, 11
<a href="#">Module Exams</a>	50%	No	Week 7 and 12

### Workshop Participation

Assessment Type <sup>1</sup>: Participatory task

Indicative Time on Task <sup>2</sup>: 2 hours

Due: **Weeks 1-13**

Weighting: **5%**

**This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)**

In-class voluntary participation will be assessed for all the workshops during the session. Attendance alone does not count towards any mark. You will have to actively participate in the workshop activities assigned to you by your tutor.

**NB. Since this is a hurdle assessment, in order to pass the unit you will be required to pass this assessment.**

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

## Diagnostic Quiz

Assessment Type <sup>1</sup>: Quiz/Test

Indicative Time on Task <sup>2</sup>: 2 hours

Due: **Week 3**

Weighting: **5%**

This quiz will be an individual assessment; You will be attempting an online quiz that will be conducted in the workshop. This quiz aims to determine students' individual strengths, weaknesses, knowledge and skills to develop a baseline of what students know about the topics

On successful completion you will be able to:

- Analyse data requirements and design and develop conceptual database models.
- Use data analysis and data modelling techniques and tools for introductory level database design and specification

## Assignment One

Assessment Type <sup>1</sup>: Design Task

Indicative Time on Task <sup>2</sup>: 27 hours

Due: **Week 6**

Weighting: **20%**

This assignment is an individual assignment. This assignment will involve designing a database using a top-down approach. You will be assessed based on the development of an EER diagram, and logical transformation for a given problem description.

On successful completion you will be able to:

- Analyse data requirements and design and develop conceptual database models.
- Use data analysis and data modelling techniques and tools for introductory level database design and specification

## Assignment Two

Assessment Type <sup>1</sup>: Programming Task

Indicative Time on Task <sup>2</sup>: 27 hours

Due: **Week 10, 11**

Weighting: **20%**

This assignment is an individual assignment. This assignment will involve designing and executing database queries to demonstrate the knowledge of SQL. You will be assessed based on the successful execution of SQL queries for a given problem description

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.

## Module Exams

Assessment Type <sup>1</sup>: Quiz/Test

Indicative Time on Task <sup>2</sup>: 20 hours

Due: **Week 7 and 12**

Weighting: **50%**

These closed-book tests will test your knowledge on the development of a conceptual model, logical transformation, and the normalisation of tables, SQL and advanced database 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

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<sup>1</sup> 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.

<sup>2</sup> 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 attend

- a two-hour lecture and
- a two-hour practical class

For details of days, times and rooms, consult the [timetables webpage](#).

**Note that Lectures and Practical classes commence in Week 1.**

You should have selected a practical class during enrolment. **You should attend the practical class in which you are enrolled.** You won't always get the class of your choice. Check availabilities via **eStudent** regularly. If ALL practical classes are full, only then, contact the convenor.

### Methods of Communication

We will communicate with you via your university email and through announcements on iLearn. Queries to convenors can either be placed on the iLearn discussion board or sent to the unit convenor via the contact email on iLearn.

### Texts and Materials

Lecture notes are made available each week but these notes 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.

### COVID Information

For the latest information on the University's response to COVID-19, please refer to the Coronavirus infection page on the Macquarie website: <https://www.mq.edu.au/about/coronavirus-faqs>. Remember to check this page regularly in case the information and requirements change during semester. If there are any changes to this unit in relation to COVID, these will be communicated via iLearn.

### Unit Schedule

In the table below, for each week, the lecturer and the topics to be covered are listed below. Online resources will be provided on iLearn

Week	Lecturer	Topic
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1	Ramakrishnan	Introduction to the Unit and Conceptual Data Modelling
2	Ramakrishnan	Conceptual Data Modelling
3	Ramakrishnan	Conceptual Data Modelling + Logical Modelling
4	Ramakrishnan	Logical Modelling
5	Ramakrishnan	Revision + Physical Modelling + SQL concepts - 1
6	Ramakrishnan	SQL concepts - 2
7	Chen	SQL concepts - 3
8	Chen	Normalisation
9	Chen	Database Application Development
10	Chen	Data Warehousing
11	Chen	Data Quality
12	Chen	Big Data & Green IT

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://policies.mq.edu.au\)](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 \(https://students.mq.edu.au/support/study/policies\)](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 \(https://policies.mq.edu.au\)](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 [ask.mq.edu.au](http://ask.mq.edu.au) or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto: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 [AskMQ](#), 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/](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

**Assessment-2:** Viva will be introduced to test the students' understanding of the codes submitted

We value student feedback to be able to continually improve the way we offer our units. As such we encourage students to provide constructive feedback via student surveys, to the teaching staff directly, or via the FSE Student Experience & Feedback link on the iLearn page.

Student feedback from the previous offering of this unit was very positive overall, with students pleased with the clarity around assessment requirements and the level of support from the teaching staff. As such, no change to the delivery of the unit is planned, however, we will continue to strive to improve the level of support and the level of student engagement.

## Computing Drop-in Centre

COMP1350 is supported by the Computing Drop-in Centre (CDC) that operates daily (weekdays) from,

- 09:00 to 11:00 (trial, at least during the first half of S2 2023),
- 12:00 to 14:00,
- 15:00 to 17:00,
- 18:00 to 20:00 (online)

The web page at <https://students.mq.edu.au/study/faculties/science-and-engineering/drop-in-centre>

contains further information including,

- location,
- the service agreement about what the centre can and cannot help you with,
- week in which the service begins,
- other units supported by the centre,
- roster (as not all time slots will have staff supporting every unit),
- zoom links for the evening sessions.

## Changes since First Published

Date	Description
05/10/2023	The typos in the Assessment-2 weight breakdown have been fixed. The correct weight breakdown is ** 5% is for assignment submission ** 15% for the viva assessment