



COMP6350

Database Systems

Session 2, Fully online/virtual 2021

School of Computing

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Session 2 Learning and Teaching Update

The decision has been made to conduct study online for the remainder of Session 2 for all units WITHOUT mandatory on-campus learning activities. Exams for Session 2 will also be online where possible to do so.

This is due to the extension of the lockdown orders and to provide certainty around arrangements for the remainder of Session 2. We hope to return to campus beyond Session 2 as soon as it is safe and appropriate to do so.

Some classes/teaching activities cannot be moved online and must be taught on campus. You should already know if you are in one of these classes/teaching activities and your unit convenor will provide you with more information via iLearn. If you want to confirm, see the list of [units with mandatory on-campus classes/teaching activities](#).

Visit the [MQ COVID-19 information page](#) for more detail.

General Information

Unit convenor and teaching staff

Convenor and Lecturer

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Credit points

10

Prerequisites

Corequisites

Co-badged status

Co-badged with COMP2350.

Unit description

*This unit has an online offering for S2 which is **synchronous**, meaning there will be set times to attend online lectures and tutorials.*

This unit provides an in-depth study of modern database technology and its dominant role in developing and maintaining enterprise information systems. The aim is to teach students how to program database applications. The emphasis is placed on business applications, using Structured Query Language (SQL) as an interactive and a programmatic language, on principles of the relational-database model, and on fundamental components of a client-server database-management system. Practical work involves the use of a commercial database-management system together with programming tools.

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: Demonstrate understanding of the basic concepts that underlie modern database management systems.

ULO2: Design and develop small, functional database applications using modern database design methods.

ULO3: Develop skills in using a industrial-strength database tools and interactive development environments for building databases.

ULO4: Complete different database programming tasks to specification using SQL

General Assessment Information

Assessment Tasks Submission/Completion Process

The assessments of this unit consist of three online quizzes, three assignments and a final exam. The solutions to the three assignments should be submitted via iLearn by the due

date. The quizzes will be released and submitted via iLearn. The final examination will be conducted in the form and date/ time to be announced later in the semester.

Late Submission Policy

In general, no extensions on assignments will be granted without an approved application for Special Consideration. There will be a deduction of 10% of the total available marks made from the total awarded mark for each 24 hour period or part thereof that the submission is late. For example, 25 hours late in submission for an assignment worth 10 marks – 20% penalty or 2 marks deducted from the total. No submission of assignment will be accepted more than three days after the due date. No replacement quiz will be available for students missing any quiz. If special consideration is granted to a student for a missing quiz, or for a request of extension of more than three days in case of an assignment, the mark for that assessment task will be based on that student's aggregated performance in the Final Examination. For instance, if a student is granted special consideration for Assignment 2 (weight 10%) for more than 3 days extension, and that student obtained 35 out of 50 in the Final Exam, then the mark of that student for Assignment 2 will be taken to be 7 (out of 10).

Assessment Standards

COMP2350 will be assessed and graded according to the University assessment and grading policies.

The following general standards of achievement will be used to assess each of the assessment tasks with respect to the letter grades.

Pass: Can demonstrate a broad knowledge of database concepts but with limited understanding. Can design and develop functional database with documentation. Is familiar with tools and interactive development environments, and comfortable with database programming.

Credit/Distinction: As for Pass plus: Exhibits breadth and depth of understanding of concepts. Can demonstrate critical analysis skills in fundamental database concepts. Able to design and develop functional and highly maintainable database, with documentation. Very familiar with tools and interactive development environments with good ability to solve database problems. Very familiar with database programming and quite able to implement solutions to database problems.

High Distinction: As for Credit/Distinction plus: Is aware of the context in which the concepts are developed and their limitations. Has demonstrated critical analysis skills in fundamental database concepts who also has exceptional analytical and critical thinking capability. Able to design and develop functional and highly maintainable database, with documentation and familiarity with tools and interactive development environments, and has exceptional ability to solve challenging database problems. Very familiar with tools and interactive development environments, and has exceptional ability to solve challenging database problems. Has exceptional database programming skills and able to implement maintainable solutions to challenging database problems.

Assessment Process

These assessment standards will be used to give a numeric mark to each assessment

submission during marking. The mark will correspond to an appropriate letter grade when relevantly weighted. The final mark for the unit will be calculated by combining the marks for all assessment tasks according to the percentage weightings shown in the assessment summary.

Supplementary Exam

In general, if you receive [Special Consideration](#) for the final exam, a supplementary exam will be scheduled after the normal exam period, following the release of marks. By making a special consideration application for the final exam you are declaring yourself available for a resit during the supplementary examination period and will not be eligible for a second special consideration approval based on pre-existing commitments. Please ensure you are familiar with the policy prior to submitting an application. Approved applicants will receive an individual notification one week prior to the exam with the exact date and time of their supplementary examination.

Assessment Tasks

Name	Weighting	Hurdle	Due
Assignment 1	10%	No	Week 4
Assignment 2	10%	No	Week 8
Final Examination	50%	No	TBA
Assignment 3	10%	No	Week 12
Online Quizzes	20%	No	Weeks 3, 7 and 11

Assignment 1

Assessment Type ¹: Modelling task

Indicative Time on Task ²: 10 hours

Due: **Week 4**

Weighting: **10%**

Assignment 1 will focus on conceptual modelling and logical design of databases.

On successful completion you will be able to:

- Demonstrate understanding of the basic concepts that underlie modern database management systems.
- Develop skills in using a industrial-strength database tools and interactive development environments for building databases.

Assignment 2

Assessment Type ¹: Design Implementation

Indicative Time on Task ²: 10 hours

Due: **Week 8**

Weighting: **10%**

Assignment 2 will assess students' ability to implement a relational database as well as querying that database.

On successful completion you will be able to:

- Demonstrate understanding of the basic concepts that underlie modern database management systems.
- Design and develop small, functional database applications using modern database design methods.
- Develop skills in using a industrial-strength database tools and interactive development environments for building databases.
- Complete different database programming tasks to specification using SQL

Final Examination

Assessment Type ¹: Examination

Indicative Time on Task ²: 35 hours

Due: **TBA**

Weighting: **50%**

The Final examination will assess students' understanding of the fundamental concepts behind database management systems, and their skills in database programming and development. Students will be able to take the exam remotely.

On successful completion you will be able to:

- Demonstrate understanding of the basic concepts that underlie modern database management systems.
- Design and develop small, functional database applications using modern database design methods.
- Complete different database programming tasks to specification using SQL

Assignment 3

Assessment Type ¹: Programming Task

Indicative Time on Task ²: 15 hours

Due: **Week 12**

Weighting: **10%**

Assignment 3 will assess students' ability to enhance databases through procedural programming.

On successful completion you will be able to:

- Demonstrate understanding of the basic concepts that underlie modern database management systems.
- Design and develop small, functional database applications using modern database design methods.
- Develop skills in using a industrial-strength database tools and interactive development environments for building databases.
- Complete different database programming tasks to specification using SQL

Online Quizzes

Assessment Type ¹: Quiz/Test

Indicative Time on Task ²: 10 hours

Due: **Weeks 3, 7 and 11**

Weighting: **20%**

There will be many quizzes over the semester to encourage engagement with and understanding of the material by the students.

On successful completion you will be able to:

- Demonstrate understanding of the basic concepts that underlie modern database management systems.
- Design and develop small, functional database applications using modern database design methods.
- Complete different database programming tasks to specification using SQL

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 during the semester you should set aside two hours for lectures, one hour for a tutorial class and one hour for a practical session. For details of days and times consult the timetables webpage at <https://timetables.mq.edu.au/2021/>. More specific information will be announced via the unit webpage on iLearn. Students are urged to actively participate in the tutorials; this helps enhancing the understanding by students.

Note that practicals and tutorials commence in week 2. You should have selected a practical session and a tutorial session during enrolment. You should attend the sessions you are enrolled in.

Required and Recommended Texts and/or Materials

Textbook

The textbook listed below cover much of the required material that will be used in preparation of lectures and/or assignments and/or practicals.

- Thomas Connolly and Carolyn Begg. [*Database Systems. A Practical Approach to Design, Implementation, and Management*](#), Sixth Edition, Pearson, 2015.

For some parts of learning, other necessary material will be made available on the unit iLearn site.

Unit Webpage and Technology Used and Required

Digital recordings of lectures will be available on iLearn via tools such as Echo360 and Zoom.

Websites

The web page for this unit can be found at <http://ilearn.mq.edu.au>

Technology

In this unit you will be exposed to the following technology and tools

- MySQL - Database Management System
- MySQL Workbench - Data Modeling Software Tool

Discussion Boards

The unit will make use of discussion boards hosted within iLearn. Please post questions there, they will be monitored by the staff on the unit regularly.

Unit Schedule

1	Introduction to Databases: Relational model	Connolly & Begg, Chapters 1,2,4 + Class Notes
2	Database modeling (ER modeling, EER modeling)	Connolly & Begg, Chapters 12-13
3	Conceptual & Logical Database design	Connolly & Begg, Chapters 16-17
4-6	Data Manipulation and Database Normalisation	Connolly & Begg, Chapters 6, 14-15
7	Relational Algebra	Connolly & Begg, Chapter 5
Recess		
8-9	Database Programming	Connolly & Begg, Chapter 8
10	Transaction management	Connolly & Begg, Chapter 22
11	Concurrency control, Recovery	Connolly & Begg, Chapter 22 (and Lecturer provided)
12	Data Storage and Management	(Lecturer Provided)
13	Revision	Lecturer Provided

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](#)
- [Grade Appeal Policy](#)
- [Complaint Management 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 or if you are a Global MBA student contact globalmba.support@mq.edu.au

Student Support

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

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

- [Getting help with your assignment](#)
- [Workshops](#)
- [StudyWise](#)
- [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

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

If you are a Global MBA student contact globalmba.support@mq.edu.au

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

The number of quizzes has been reduced from four to three. This aligns better with the three assignments, is likely preferable from students' point of view.

The number of hours dedicated to lectures has been reduced from three to two as per university instructions.