COMPUTER SCIENCE

COURSE 2350

Database Systems

Session 2, Special circumstances 2021

Department of Computing

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Notice
Some on-campus classes have moved online for the first two weeks of Session, before returning to campus in Week 3. If you are studying a unit outside of the primary Session 2 timetable, please contact your teaching staff team for further details.

Some classes/teaching activities cannot be moved online and must be taught on campus. To find out if you are enrolled in one of these classes/teaching activities, you can check to see if your unit is on the list of units with mandatory on-campus classes/teaching activities.

Your Unit Convenor will provide more information via an iLearn announcement when your iLearn unit becomes available.
General Information
Unit convenor and teaching staff
Convenor and Lecturer
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<table>
<thead>
<tr>
<th>Credit points</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prerequisites</td>
<td>COMP1350 or ISYS114</td>
</tr>
<tr>
<td>Corequisites</td>
<td></td>
</tr>
<tr>
<td>Co-badged status</td>
<td>Co-badged with COMP6350.</td>
</tr>
</tbody>
</table>

**Unit description**
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://students.mq.edu.au/important-dates](https://students.mq.edu.au/important-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**

<table>
<thead>
<tr>
<th>Name</th>
<th>Weighting</th>
<th>Hurdle</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment 1</td>
<td>10%</td>
<td>No</td>
<td>Week 4</td>
</tr>
<tr>
<td>Assignment 2</td>
<td>10%</td>
<td>No</td>
<td>Week 8</td>
</tr>
<tr>
<td>Final Examination</td>
<td>50%</td>
<td>No</td>
<td>TBA</td>
</tr>
<tr>
<td>Assignment 3</td>
<td>10%</td>
<td>No</td>
<td>Week 12</td>
</tr>
<tr>
<td>Online Quizzes</td>
<td>20%</td>
<td>No</td>
<td>Weeks 3, 7 and 11</td>
</tr>
</tbody>
</table>

**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 an industrial-strength database tools and interactive development environments for building databases.

**Assignment 2**

Assessment Type 1: Design Implementation
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 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.

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
Assignment 3 will assess students' ability to enhance a database 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 an industrial-strength database tool 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.

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 Learning Skills Unit 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.


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

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

### Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). Students should be aware of the following policies in particular with regard to Learning and Teaching:
Students seeking more policy resources can visit the Student Policy Gateway (https://students.mq.edu.au/support/study/student-policy-gateway). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit Policy Central (https://staff.mq.edu.au/work стратегии и принципы управления/политика и процедуры/политика-центр).

**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.
Student Enquiry Service
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

Equity 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.

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 top two as per university instructions.