COMP1350

Introduction to Database Design and Management

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

School of Computing

Contents

General Information

Unit convenor and teaching staff
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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,

- ~~10%~~ 5% is for submission
- ~~10%~~ 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.

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.

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
Workshop Participation	5%	Yes	Weeks 1-13
Diagnostic Quiz	5%	No	Week 3
Assignment One	20%	No	Week 6
Assignment Two	20%	No	Week 10, 11
Module Exams	50%	No	Week 7 and 12

Workshop Participation

Assessment Type [1]: Participatory task
Indicative Time on Task [2]: 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 [1]: Quiz/Test
Indicative Time on Task [2]: 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 [1]: Design Task
Indicative Time on Task [2]: 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 [1]: Programming Task
Indicative Time on Task [2]: 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 [1]: Quiz/Test
Indicative Time on Task [2]: 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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[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 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

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). 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 ask.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 an d maths support, academic skills development and wellbeing consultations.

Student Support

Macquarie University provides a range of support services for students. For details, visit http://stu dents.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/.

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