

INFO6001: Database Management 1

Callaghan, Singapore NAIHE, Online and Sydney Elizabeth Street
Trimester 1 - 2024



OVERVIEW

Course Description Modern enterprises rely on the efficient storage and management of data. An organisation's data provides information that is vital for its day-to-day existence. Corporate data structures can also be formed to serve as a knowledge repository for the organisation. These provide a basis for strategic decisions and enhance competitive advantage. This course provides the foundational knowledge of database systems and their implementation with elementary programming skills. The course covers both the theoretical content and the practical implementation of database requirements for organisations. It presents the basics of information storage and management, from the conceptual modelling of an organisation's data requirements using the relational model, through to the implementation of these requirements with tools such as SQL and techniques such as normalisation. It also addresses the practical issues of security and concurrency in data transactions. It introduces elementary programming techniques.

Academic Progress Requirements Nil

Assumed Knowledge Desktop computer competency as prescribed by the International Computer Driving Licence. (See Australian Computer Society at <http://www.icdl.com.au/>)

Contact Hours
Callaghan Computer Lab
Face to Face On Campus
2 hour(s) per week(s) for 11 week(s) starting Week 2

Online Activity
Online
2 hour(s) per week(s) for 12 week(s) starting Week 1

Singapore NAIHE Computer Lab
Face to Face On Campus
2 hour(s) per week(s) for 11 week(s) starting Week 2

Lecture
Face to Face On Campus
2 hour(s) per week(s) for 12 week(s) starting Week 1

Online Computer Lab
Online
2 hour(s) per week(s) for 11 week(s) starting Week 2
For the On-line version of the course, four hours per week is a

COURSE OUTLINE

minimum recommendation and may vary with individual student's learning style for on-line courses.

Online Activity

Online

2 hour(s) per week(s) for 12 week(s) starting Week 1

Sydney Elizabeth Street

Computer Lab

Face to Face On Campus

2 hour(s) per week(s) for 11 week(s) starting Week 2

Online Activity

Online

2 hour(s) per week(s) for 12 week(s) starting Week 1

Unit Weighting

10

Workload

Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.

CONTACTS

Course Coordinator **Callaghan, Singapore NAIHE, Online and Sydney Elizabeth Street**
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Consultation: Email for appointment.

Teaching Staff Other teaching staff will be advised on the course Canvas site.

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SYLLABUS

Course Content Topics will generally include:

- 3 Level Architecture
- SQL Basics: DDL, DML
- Conceptual Modelling: E/R
- Normalisation (to BCNF)
- Database Design and Case Studies
- Theory of Relational Database Systems
- Data Integrity
- Introductory computer skills in a contemporary development environment
- Overview of the issues in Transaction Processing within the business environment
- Contemporary issues in Database Systems.

Course Learning Outcomes

On successful completion of this course, students will be able to:

1. Master fundamental relational database concepts including entity relationship diagrams, data normalisation and relational operators
2. Design, develop and implement a mid-scale relational databases for an application domain using a commercial-grade RDBMS

3. Design and implement physical database based on logical database representation
4. Understand system implementation issues such as data views, data independence, indexing, security and transaction management
5. Apply elementary programming skills.

Course Materials

COMPULSORY REQUIREMENTS

In order to pass this course, each student must complete ALL of the following compulsory requirements:

Contact Hour Requirements:

-

Course Assessment Requirements:

- Assessment 5 - Final Examination: Pass requirement - Must pass this assessment item to pass the course.

Compulsory Placement and WHS Requirements:

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ASSESSMENTS

This course has 5 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	Assignment 1 - Database Project - Description and EER model	Week 4, 11:59pm, Feb 25, Sunday	Individual	15%	1, 2
2	Assignment 2 - Database Project - Logical Database Design	Week 8, 11:59pm, Mar 24, Sunday	Individual	15%	1, 2
3	Practical Test - Lab test on SQL	Week 9, during computer lab.	Individual	15%	5
4	Assignment 3 - Database Project - Physical Database Design	Week 12, during computer lab	Individual	15%	1, 2, 3, 5
5	Final Examination*	In trimester exam period	Individual	40%	1, 2, 3, 4, 5

* This assessment has a compulsory requirement.

Late Submissions

The mark for an assessment item submitted after the designated time on the due date, without an approved extension of time, will be reduced by 10% of the possible maximum mark for that assessment item for each day or part day that the assessment item is late. Note: this applies equally to week and weekend days.

Assessment 1 - Assignment 1 - Database Project - Description and EER model

Assessment Type	Project
Purpose	Database Project - Description and EER model
Description	In this assessment students are required to complete the first two steps of the database design process: development of user requirements specification and completing the conceptual database model for the given case study.
Weighting	15%
Due Date	Week 4, 11:59pm, Feb 25, Sunday
Submission Method	Online As advised on Assessment requirements Document.

Assessment Criteria	As advised on Assessment requirements Document.
Return Method	Online
Feedback Provided	Returned Work - As advised on Assessment requirements Document. As advised on Assessment requirements Document.

Assessment 2 - Assignment 2 - Database Project - Logical Database Design

Assessment Type	Project
Purpose	Database Project - Logical Database Design
Description	In this assessment students are required to complete the third step of the database design process: logical database design including normalisation.
Weighting	15%
Due Date	Week 8, 11:59pm, Mar 24, Sunday
Submission Method	Online
Assessment Criteria	As advised on Assessment requirements Document
Return Method	As advised on Assessment requirements Document
Feedback Provided	Online
Assessment Criteria	As advised on Assessment requirements Document
Return Method	As advised on Assessment requirements Document
Feedback Provided	Returned Work - As advised on Assessment requirements Document. As advised on Assessment requirements Document

Assessment 3 - Practical Test - Lab test on SQL

Assessment Type	In Term Test
Purpose	Practical Test - Lab test on SQL
Description	The lab test requires students to write SQL statements based on the given database schema. The database schema is provided in advance for students to get familiar with the database for answering the questions in the test.
Weighting	15%
Due Date	Week 9, during computer lab.
Submission Method	Online
Assessment Criteria	As advised on Assessment requirements Document.
Return Method	As advised on Assessment requirements Document.
Feedback Provided	Returned Work - As advised on Assessment requirements Document. As advised on Assessment requirements Document.

Assessment 4 - Assignment 3 - Database Project - Physical Database Design

Assessment Type	Project
Purpose	Assignment 3 - Database Project - Physical Database Design
Description	In this assessment students are required to complete the last step of the database design process: physical database design which includes implementation of the database for the given case study.
Weighting	15%
Due Date	Week 12, during computer lab
Submission Method	Online
Assessment Criteria	As advised on Assessment requirements Document
Return Method	As advised on Assessment requirements Document
Feedback Provided	Returned Work - As advised on Assessment requirements Document. As advised on Assessment requirements Document

Assessment 5 - Final Examination

Assessment Type	Formal Examination
Purpose	Formal Examination
Description	Formal Examination
Weighting	40%
Compulsory Requirements	Pass requirement - Must pass this assessment item to pass the course.
Due Date	In trimester exam period
Submission Method	Formal Exam
Assessment Criteria	As advised in class.

Return Method	Not Returned
Feedback Provided	No Feedback
Opportunity to Reattempt	Students WILL NOT be given the opportunity to reattempt this assessment.

ADDITIONAL INFORMATION

Grading Scheme

This course is graded as follows:

Range of Marks	Grade	Description
85-100	High Distinction (HD)	Outstanding standard indicating comprehensive knowledge and understanding of the relevant materials; demonstration of an outstanding level of academic achievement; mastery of skills*; and achievement of all assessment objectives.
75-84	Distinction (D)	Excellent standard indicating a very high level of knowledge and understanding of the relevant materials; demonstration of a very high level of academic ability; sound development of skills*; and achievement of all assessment objectives.
65-74	Credit (C)	Good standard indicating a high level of knowledge and understanding of the relevant materials; demonstration of a high level of academic achievement; reasonable development of skills*; and achievement of all learning outcomes.
50-64	Pass (P)	Satisfactory standard indicating an adequate knowledge and understanding of the relevant materials; demonstration of an adequate level of academic achievement; satisfactory development of skills*; and achievement of all learning outcomes.
0-49	Fail (FF)	Failure to satisfactorily achieve learning outcomes. If all compulsory course components are not completed the mark will be zero. A fail grade may also be awarded following disciplinary action.

*Skills are those identified for the purposes of assessment task(s).

Communication Methods

Communication methods used in this course include:

Course Evaluation

Each year feedback is sought from students and other stakeholders about the courses offered in the University for the purposes of identifying areas of excellence and potential improvement.

Oral Interviews (Vivas)

As part of the evaluation process of any assessment item in this course an oral examination (viva) may be conducted. The purpose of the oral examination is to verify the authorship of the material submitted in response to the assessment task. The oral examination will be conducted in accordance with the principles set out in the [Oral Examination \(viva\) Procedure](#). In cases where the oral examination reveals the assessment item may not be the student's own work the case will be dealt with under the [Student Conduct Rule](#).

Academic Misconduct

All students are required to meet the academic integrity standards of the University. These standards reinforce the importance of integrity and honesty in an academic environment. Academic Integrity policies apply to all students of the University in all modes of study and in all locations. For the Student Academic Integrity Policy, refer to <https://policies.newcastle.edu.au/document/view-current.php?id=35>.

Adverse Circumstances

The University acknowledges the right of students to seek consideration for the impact of allowable adverse circumstances that may affect their performance in assessment item(s). Applications for special consideration due to adverse circumstances will be made using the online Adverse Circumstances system where:

1. the assessment item is a major assessment item; or
2. the assessment item is a minor assessment item and the Course Co-ordinator has

specified in the Course Outline that students may apply the online Adverse Circumstances system;

3. you are requesting a change of placement; or

4. the course has a compulsory attendance requirement.

Before applying you must refer to the Adverse Circumstance Affecting Assessment Items Procedure available at:

<https://policies.newcastle.edu.au/document/view-current.php?id=236>

Important Policy Information

The Help button in the Canvas Navigation menu contains helpful information for using the Learning Management System. Students should familiarise themselves with the policies and procedures at <https://www.newcastle.edu.au/current-students/respect-at-uni/policies-and-procedures> that support a safe and respectful environment at the University.

	University of Newcastle Masters of Information Technology Graduate Profile Statements	Taught	Practised	Assessed	Level of Capability
1	The ability to identify and analyse complex problems within information technology and design solutions to these problems at a highly skilled level	X	X	X	5
2	A depth of technical expertise in at least one facet of information technology sufficient for a career in information technology together with the capacity to continue developing relevant knowledge, skills and expertise throughout their careers	X	X	X	3
3	The ability to manage projects in aspects of information technology relevant to their field of study, including the ability to develop, manage and participate at all levels in team environments	X	X		3
4	An understanding of professionalism and ethics in the context of the global information technology industry.	X			2
5	The ability to communicate effectively through a range of verbal, written and/or presentation skills at an advanced level	X	X	X	5
6	The ability to apply their knowledge and skills to plan and execute a substantial capstone experience or a research-based project and/or piece of scholarship	X	X	X	4

This course outline was approved by the Head of School. No alteration of this course outline is permitted without Head of School approval. If a change is approved, students will be notified and an amended course outline will be provided in the same manner as the original.

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