

## COMP1140: Database and Information Management

Singapore PSB

Trimester 1 - 2024 (Singapore)



THE UNIVERSITY OF  
NEWCASTLE  
AUSTRALIA

## OVERVIEW

<b>Course Description</b>	This course provides students with theoretical knowledge and practical skills in the use of databases and database management systems. The conceptual and logical design and implementation of relational databases are covered.
<b>Academic Progress Requirements</b>	Nil
<b>Requisites</b>	This course has similarities to INFT2040. If you have completed INFT2040 you cannot enrol in this course.
<b>Assumed Knowledge</b>	Knowledge of and experience in programming.
<b>Contact Hours</b>	<b>Singapore PSB</b>  <b>Computer Lab</b> Face to Face On Campus 2 hour(s) per week(s) for 11 week(s) starting Week 3  <b>Lecture</b> Face to Face On Campus 2 hour(s) per week(s) for 12 week(s) starting Week 1
<b>Unit Weighting</b>	10
<b>Workload</b>	Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.

# COURSE OUTLINE

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# CONTACTS

<b>Course Coordinator</b>	<b>Singapore PSB</b> Associate Professor Suhuai Luo <a href="mailto:Suhuai.Luo@newcastle.edu.au">Suhuai.Luo@newcastle.edu.au</a> +61 2 4985 4508 Consultation: By email.
<b>Teaching Staff</b>	Other teaching staff will be advised on the course Canvas site.
<b>School Office</b>	<b>School of Information and Physical Sciences</b> SR233 Social Sciences Building Callaghan CESE-SIPS-Admin@newcastle.edu.au +61 2 4921 5513

# SYLLABUS

<b>Course Content</b>	<ol style="list-style-type: none"><li>1. Conceptual Modelling with ER</li><li>2. Relational Model and ER to Relational Mapping</li><li>3. Schema Refinement with Normalization based on Functional Dependencies</li><li>4. Relational Algebra</li><li>5. SQL</li><li>6. Database Transactions and Concurrency Control</li><li>7. Security, Authorisation and Access</li></ol>
<b>Course Learning Outcomes</b>	<p><b>On successful completion of this course, students will be able to:</b></p> <ol style="list-style-type: none"><li>1. Design conceptual models encapsulating data requirements for business and organisational scenarios</li><li>2. Convert conceptual models to logical data models</li><li>3. Implement a database solution using contemporary database management systems (DBMS)</li><li>4. Develop expertise in database languages (e.g. SQL) including the ability to develop sophisticated queries to extract information from large datasets</li><li>5. Understand data security and data quality management</li></ol>
<b>Course Materials</b>	<p><b>Required Text:</b></p> <p>Thomas Connolly, Carolyn Begg, Database Systems: A Practical Approach to Design, Implementation &amp; Management, Addison Wesley 6<sup>th</sup> Edition (Global), 2015, ISBN-101292061189, ISBN-1397812920611840020</p> <p><b>Lecture Materials</b> Please check the course Canvas site.</p>

# COMPULSORY REQUIREMENTS

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

## Course Assessment Requirements:

- Assessment 5 - Final Examination: Pass requirement 40% - Must obtain 40% in this assessment item to pass the course.

Students whose overall mark in the course is 50% or more, but who score less than 40% in the compulsory item and thus fail to demonstrate the required proficiency, will be awarded a Criterion Fail grade, which will show as FF on their formal transcript. However, students in this position who have scored at least 25% in the compulsory item will be allowed to undertake a supplementary 'capped' assessment in which they can score at most 50% of the possible mark for that item.

# 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 5, due at 11:59pm, Feb 11, Sunday	Individual	15%	1
2	Assignment 2, Database Project - Logical Database Design	Week 9, due at 11:59pm, Mar 10, Sunday	Individual	15%	2
3	Practical Test - Lab test on SQL	Week 10, in your lab	Individual	15%	4
4	Assignment 3 - Database Project - Physical Database Design	Week 13, due in your lab	Individual	15%	3, 5
5	Final Examination*	Formal 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  
**Description** The stage of conceptual database design will be completed.  
**Weighting** 15%  
**Due Date** Week 5, due at 11:59pm, Feb 11, Sunday  
**Submission Method** Specific Location  
**Assessment Criteria** As advised on Assessment Requirements Document  
**Return Method** As advised on Assessment Requirements Document  
**Feedback Provided** Specific Location  
Returned Work

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

**Assessment Type** Project  
**Description** The stage of logical database design will be completed.  
**Weighting** 15%  
**Due Date** Week 9, due at 11:59pm, Mar 10, Sunday  
**Submission Method** Specific Location  
As advised on Assessment Requirements Document

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<b>Assessment Criteria</b>	As advised on Assessment Requirements Document
<b>Return Method</b>	Specific Location
<b>Feedback Provided</b>	Returned Work

### Assessment 3 - Practical Test - Lab test on SQL

<b>Assessment Type</b>	Quiz
<b>Description</b>	Lab test on SQL
<b>Weighting</b>	15%
<b>Due Date</b>	Week 10, in your lab
<b>Submission Method</b>	In Class
<b>Assessment Criteria</b>	As advised on Assessment Requirements Document
<b>Return Method</b>	In Class
<b>Feedback Provided</b>	Returned Work

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

<b>Assessment Type</b>	Project
<b>Description</b>	The stage of physical database design will be completed
<b>Weighting</b>	15%
<b>Due Date</b>	Week 13, due in your lab
<b>Submission Method</b>	Specific Location
	As advised on Assessment Requirements Document
<b>Assessment Criteria</b>	As advised on Assessment Requirements Document
<b>Return Method</b>	Specific Location
<b>Feedback Provided</b>	Returned Work

### Assessment 5 - Final Examination

<b>Assessment Type</b>	Online Open Book Formal Examination
<b>Description</b>	Final Formal Exam
<b>Weighting</b>	40%
<b>Compulsory Requirements</b>	Pass requirement 40% - Must obtain 40% in this assessment item to pass the course.
<b>Due Date</b>	Formal Exam Period
<b>Submission Method</b>	Formal Exam
<b>Assessment Criteria</b>	
<b>Return Method</b>	Not Returned
<b>Feedback Provided</b>	No Feedback
<b>Opportunity to Reattempt</b>	Students WILL 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:

- Canvas Course Site: Students will receive communications via the posting of content or announcements on the Canvas course site.
- Email: Students will receive communications via their student email account.

### 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.

*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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## GRADUATE PROFILE STATEMENT

The following table illustrates how this course contributes towards building the skills students will need to work in their profession.

### Level of capability

- Level 1 indicates an introduction to a topic at a university level
- Levels 2 and 3 indicate progressive reinforcement of that topic
- Level 4 indicates skills commensurate with a graduate – entry to professional practice
- Level 5 indicates highly specialist or professional ability

### Bachelor of Information Technology

	University of Newcastle Bachelor of Information Technology Graduate Profile Statement	Taught	Practised	Assessed	Level of capability
1	Demonstrate a comprehensive understanding of information technology with an emphasis on interconnected applications, information management, and user requirements for ethical professional practice.	x	x	x	2
2	Apply critical reasoning and systems thinking to understand and support the operation and constraints of contemporary enterprises and their dynamic environment.	x	x	x	2
3	Work both independently and collaboratively to locate, manage and organise information and resources and will apply evidence-based approaches to create, modify and maintain designs and design solutions.	x	x	x	2
4	Apply problem solving skills, project management skills, and technical expertise to analyse, interpret, evaluate and generate solutions to complex technical and organisational problems.	x	x	x	2
5	Demonstrate professional judgement and responsibility by clearly and persuasively communicating principles, practices, and standards of information technology to specialist and non-specialist audiences.				