COIT20247 *Database Design and Development*
Term 1 - 2018

Profile information current as at 07/05/2024 01:04 pm

All details in this unit profile for COIT20247 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

General Information

Overview
In this unit, you will develop a small database by understanding the conceptual and logical design of relational databases. An in-depth knowledge for designing queries using SQL will be developed. The importance of normalisation and tools to achieve it will be emphasised. Database integrity constraints and other specification requirements to be followed during the stage of physical design of the databases are covered extensively. Other topics include the fundamentals of distributed database and data warehousing as well as issues related to security and concurrency control in multi user database environments. This is a core unit for both the Master of Information Systems and Master of Information Technology since database technology is central to all enterprise applications. Note: If you have completed unit COIS20026 then you cannot take this unit.

Details
Career Level: *Postgraduate*
Unit Level: *Level 8*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites
There are no requisites for this unit.
Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the Assessment Policy and Procedure (Higher Education Coursework).

Offerings For Term 1 - 2018

- Brisbane
- Distance
- Melbourne
- Rockhampton
- Sydney

Attendance Requirements
All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Website
This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.

Class and Assessment Overview

Recommended Student Time Commitment

Each 6-credit Postgraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

Regional Campuses
Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

Metropolitan Campuses
Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. **Written Assessment**
Weighting: 30%
2. **Practical and Written Assessment**
Weighting: 35%
3. **Examination**
Weighting: 35%

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the University's Grades and Results Policy for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the CQUniversity Policy site.
You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the CQUniversity Policy site.

Previous Student Feedback

Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

Feedback from From Moodle response and discussion with co-workers.

Feedback

The requirements 'Relations- mapping' and 'Normalization' are repeated in Assignment 1 and also in assignment 2. In order to conform to the unit profile, the assignment 1 requires the students to perform the above on their own ER diagram. However, in the assignment 2 the students have to repeat the same activities on the ER diagram of the assignment 1-solution released to them.

Recommendation

To avoid the repeating activities in the assignments - 'Relations- mapping' and 'Normalisation'. Necessary changes have to be made in future unit profiles

Unit Learning Outcomes

On successful completion of this unit, you will be able to:

1. Explain the purpose of and technical foundations related to database technology.
2. Explain the processes undertaken during identification of functional dependancies and normalisation.
3. Design and develop a small database using Microsoft Access and design queries using structured query language (SQL).
4. Identify issues related to data integrity in a multi user database environment.
5. Explain the fundamental concepts of distributed database and data warehousing.

Australian Computer Society (ACS) recognises the Skills Framework for the Information Age (SFIA). SFIA is in use in over 100 countries and provides a widely used and consistent definition of ICT skills. SFIA is increasingly being used when developing job descriptions and role profiles.
ACS members can use the tool MySFIA to build a skills profile at
https://www.acs.org.au/professionalrecognition/mysfia-b2c.html
This unit contributes to the workplace skills as defined by SFIA. The SFIA code is included:

- Data Analysis (DTAN)
- Systems Design (DESN)
- Database/Repository Design (DBDS)
- Systems Integration (SINT)
- Program ming/Software Development (PROG)
- Testing (TEST)
- Release and Deployment (RELM)
- Applications Support (ASUP)

Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level | • Introductory Level | • Intermediate Level | • Graduate Level | ◦ Professional Level | ◦ Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
1 - Written Assessment - 30%	•	•			

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
2 - Practical and Written Assessment - 35%	•	•	•		
3 - Examination - 35%	•	•	•	•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
1 - Knowledge	◦	◦	◦	◦	◦
2 - Communication	◦	◦	◦	◦	◦
3 - Cognitive, technical and creative skills	◦	◦	◦	◦	◦
4 - Research					
5 - Self-management					
6 - Ethical and Professional Responsibility		◦	◦	◦	◦
7 - Leadership					
8 - Aboriginal and Torres Strait Islander Cultures					

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes							
	1	2	3	4	5	6	7	8
1 - Written Assessment - 30%	◦	◦	◦					
2 - Practical and Written Assessment - 35%	◦	◦	◦			◦		
3 - Examination - 35%	◦	◦	◦			◦		

Textbooks and Resources

Textbooks

COIT20247

Prescribed

Modern Database management
Edition: 12 (2016)
Authors: Jeffrey A. Hoffer, Ramesh Venkataraman, Heikki Topi
Pearson
Boston , Massachusetts , USA
ISBN: ISBN-13: 978-1-292-10185-9
Binding: Other

View textbooks at the CQUniversity Bookshop

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- MS Access 2007 or 2010

Referencing Style

All submissions for this unit must use the referencing style: Harvard (author-date)
For further information, see the Assessment Tasks.

Teaching Contacts

Umapathy Venugopal Unit Coordinator
u.venugopal@cqu.edu.au

Schedule

Week 1 - 05 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
Introduction	Textbook Chapter 1 & Week 1 online materials	

Week 2 - 12 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
Conceptual modelling (1)	Textbook Chapters 1, 2 & Week 2 online materials	

Week 3 - 19 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
Conceptual modelling (2)	Textbook Chapter 3 & Week 3 online materials	

Week 4 - 26 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
Logical design (1)	Textbook Chapter 4 & Week 4 online materials	

Week 5 - 02 Apr 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Logical design (2)	Textbook Chapter 4 & Week 5 online materials	**Assignment 1** Due: Week 5 Friday (6 Apr 2018) 11:45 pm AEST
Vacation Week - 09 Apr 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Week 6 - 16 Apr 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Physical design	Textbook Chapter 5 & Week 6 online materials	
Week 7 - 23 Apr 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
SQL (1)	Textbook Chapter 6 & Week 7 online materials	
Week 8 - 30 Apr 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
SQL (2)	Textbook Chapter 6 & Week 8 online materials	
Week 9 - 07 May 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
SQL (3)	Textbook Chapters 6, 7 & Week 9 online materials	
Week 10 - 14 May 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Database administration	Textbook Chapter 12 & Week 10 online materials	**Assignment 2** Due: Week 10 Friday (18 May 2018) 11:45 pm AEST
Week 11 - 21 May 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Distributed databases	Textbook Online chapters-Chapter 13 & Week 11 online materials	
Week 12 - 28 May 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Data warehousing & Revision	Textbook Chapter 9 & Week 12 online materials	
Review/Exam Week - 04 Jun 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Exam Week - 11 Jun 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**

Term Specific Information

Unit Coordinator: Umapathy Venugopal
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Telephone: (02) 9324 5789

Assessment Tasks

1 Assignment 1

Assessment Type
Written Assessment

Task Description
The purpose of this assignment is to assess your competency in data modelling using Entity Relationship principles for the given business case study and transforming the Entity Relationship model to 3NF Relations. A case study will be available in the unit website for which you need to develop an appropriate Entity Relationship Diagram (ERD) and then optionally convert your ERD into 3rd Normal Form Relations.
The detailed assignment specifications including the case study will be available from the unit Moodle site.

Assessment Due Date
Week 5 Friday (6 Apr 2018) 11:45 pm AEST

Return Date to Students
Week 6 Friday (20 Apr 2018)

Weighting
30%

Assessment Criteria
The detailed marking criteria will be provided along with the assignment specifications.
Your assignment solution will be assessed mainly on the following:

- identifying suitable entities, identifiers & attributes, relationships and cardinalities
- using appropriate symbols to represent the entities, relationships and cardinalities
- specifying relevant assumptions and business rules
- converting the ERD into 3NF relations (optional)

Penalties related to late submission and plagiarism will be applied as per University policy.

Referencing Style

- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Explain the purpose of and technical foundations related to database technology.
- Explain the processes undertaken during identification of functional dependancies and normalisation.

Graduate Attributes

- Knowledge
- Communication
- Cognitive, technical and creative skills

2 Assignment 2

Assessment Type
Practical and Written Assessment

Task Description
The purpose of this assignment is to assess your competency in designing and implementing a relational database and your ability to solve simple or complex business logic/needs through creation of SQL queries. During week 7, a model solution for the Assignment 1 will be released in the unit Moodle site. Your task for this assignment is to perform logical design, physical design and implement a database based on the Assignment 1 model solution (released) including creation of SQL queries, forms and/or report objects.
The detailed assignment specifications and submission details will be available in the unit Moodle site.

Assessment Due Date
Week 10 Friday (18 May 2018) 11:45 pm AEST

Return Date to Students
Week 12 Friday (1 June 2018)

Weighting
35%

Assessment Criteria
The detailed marking criteria will be provided along with the assignment specifications.
In addition to evaluating your ability to perform the logical design anew, your assignment solution will be assessed mainly on your ability to create a relational database that contains the following:

- appropriate tables containing relevant attributes with suitable properties
- suitable relationships amongst the tables
- SQL statements relevant to the given business requests
- form and/or report object(s) relevant to the given business requests

Penalties related to late submission and plagiarism will be applied as per University policy.

Referencing Style

- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Explain the purpose of and technical foundations related to database technology.
- Explain the processes undertaken during identification of functional dependancies and normalisation.
- Design and develop a small database using Microsoft Access and design queries using structured query language (SQL).

Graduate Attributes

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Ethical and Professional Responsibility

Examination

Outline
Complete an invigilated examination.

Date
During the examination period at a CQUniversity examination centre.

Weighting
35%

Length
120 minutes

Minimum mark or grade
40%

Exam Conditions
Closed Book.

Materials
Dictionary - non-electronic, concise, direct translation only (dictionary must not contain any notes or comments).
Calculator - non-programmable, no text retrieval, silent only

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the **Student Academic Integrity Policy and Procedure**. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?
A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?
A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?
For academic advice and guidance, the Academic Learning Centre (ALC) can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?

Be Honest
If your assessment task is done by someone else, it would be dishonest of you to claim it as your own

Seek Help
If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)

Produce Original Work
Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem