COIT20258 *Software Engineering*
Term 2 - 2018

Profile information current as at 12/10/2024 06:20 pm

All details in this unit profile for COIT20258 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

This unit aims to teach you both theoretical and practical aspects of software engineering which involves specification, development, management and evolution of software systems. Theory will focus on software processes, requirements engineering, system models and modelling, robustness analysis, architectural design, object-oriented design, and software development methodology. The theoretical and practical aspects of software testing, software evolution, and quality management including quality assurance, and quality control are also discussed. You will also be introduced to the principles of software evolution and configuration management. This unit has a strong practical focus and the theoretical aspects are reinforced with practical work. The software engineering life cycle support functionality provided by modern software development environments is also addressed.

Details

Career Level: *Postgraduate*
Unit Level: *Level 9*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites

Pre-requisites: COIT20247 Database Design and Development, COIT20256 Data Structures and Algorithms, and COIT20248 Information Systems Analysis and Design Anti-requisites: COIT20226 Software Design and Implementation 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 2 - 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. **Practical Assessment**
Weighting: 20%
2. **Practical Assessment**
Weighting: 30%
3. **Examination**
Weighting: 50%

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 Student feedback.

Feedback
Agile development.

Recommendation
Emphasise in the assignment specifications that Agile development with two iterations is being used to develop an application. The two iterations correspond to Assignment 1 and Assignment 2.

Unit Learning Outcomes

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

1. Apply the principles of software design
2. Propose appropriate software management processes for a software engineering project
3. Employ Unified Modeling Language (UML) and design patterns in the design and documentation of software systems
4. Critique design alternatives and development methods available to a software developer
5. Design, develop, and test non-distributed, three layered software applications
6. Exploit the software engineering life cycle support functionality provided by modern software development environments.

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 following workplace skills as defined by SFIA:

- Systems Design (DESN)
- System Integration (SINT)
- Programming/Software Development (PROG)
- Data Analysis (DTAN)
- Database/Repository Design (DBDS)
- Testing (TEST)
- 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	6
1 - Practical Assessment - 20%			•		•	•
2 - Practical Assessment - 30%	•		•		•	•

Assessment Tasks	Learning Outcomes					
	1	2	3	4	5	6
3 - Examination - 50%	•	•		•		

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes					
	1	2	3	4	5	6
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 - Practical Assessment - 20%	○	○	○		○	○		
2 - Practical Assessment - 30%	○	○	○		○	○		
3 - Examination - 50%	○	○	○		○	○		

Textbooks and Resources

Textbooks

COIT20258

Prescribed

Software Engineering
Edition: 10th. (2016)
Authors: Sommerville, I.
Pearson
Harlow , Essex , England
ISBN: 1-292-09613-6
Binding: Paperback

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- NetBeans IDE

Referencing Style

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

Teaching Contacts

Dennis Jarvis Unit Coordinator
d.jarvis@cqu.edu.au

Schedule

Week 1 - 09 Jul 2018

Module/Topic	Chapter	Events and Submissions/Topic
Introduction; NetBeans	Chapter 1; Online Material	

Week 2 - 16 Jul 2018

Module/Topic	Chapter	Events and Submissions/Topic
Software Processes; Case Study 1 - AddressBook: Model/View (MV)	Chapter 2; Online Material	

Week 3 - 23 Jul 2018

Module/Topic	Chapter	Events and Submissions/Topic
Agile Software Development; Case Study 1 - AddressBook: Model/View/Presenter (MVP)	Chapter 3; Online Material	

Week 4 - 30 Jul 2018

Module/Topic	Chapter	Events and Submissions/Topic
Requirements Engineering; System Modelling	Chapter 4, Chapter 5	

Week 5 - 06 Aug 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Requirements Analysis; Unit testing	Online Material; Online material	
Vacation Week - 13 Aug 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Week 6 - 20 Aug 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Architectural Design; GUI, DB Design	Chapter 6; Online Material	**Assignment 1** Due: Week 6 Friday (24 Aug 2018) 11:45 pm AEST
Week 7 - 27 Aug 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Design and Implementation; Design Documents	Chapter 7; Online Material	
Week 8 - 03 Sep 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Design Principles; Case Study 1 - AddressBook: Model/View/Controller (MVC)	Online Material; Online Material	
Week 9 - 10 Sep 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Software Testing; Case Study 1 - AddressBook: Critique	Chapter 8; Online Material	
Week 10 - 17 Sep 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Software Evolution; Case Study 2 - Wumpus game: Specification	Chapter 9; Online Material	
Week 11 - 24 Sep 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Quality Management; Case Study 2 - Wumpus game: Design	Chapter 24; Online Material	**Assignment 2** Due: Week 11 Friday (28 Sept 2018) 11:45 pm AEST
Week 12 - 01 Oct 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Configuration Management; Review	Chapter 25; Online Material	
Review/Exam Week - 08 Oct 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Exam Week - 15 Oct 2018		
Module/Topic	**Chapter**	**Events and Submissions/Topic**

Assessment Tasks

1 Assignment 1

Assessment Type
Practical Assessment

Task Description
Students will implement a Java application that conforms to the MVP (Model View Presenter) pattern. The view will contain a Swing based GUI and the model will interact with a Java DB database. The specification of the system to be

built (including the design document) will be provided on the unit web site.

Assessment Due Date
Week 6 Friday (24 Aug 2018) 11:45 pm AEST

Return Date to Students

Two weeks after submission

Weighting
20%

Assessment Criteria

Criteria	Marks Available
Application class	1
Model + interface classes	4
View + interface classes	3
Presenter class	3
Layer interactions (Application/MVP, V/P, P/M, M/database)	4
Source code documentation / variable naming / code layout	2
Package structure	1
Acceptance tests (0 if any test fails)	2
Total	**20**

Referencing Style

- Harvard (author-date)

Submission
Online

assessmentOutcome

- Employ Unified Modeling Language (UML) and design patterns in the design and documentation of software systems
- Design, develop, and test non-distributed, three layered software applications
- Exploit the software engineering life cycle support functionality provided by modern software development environments.

assessmentGradAttribute

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

2 Assignment 2

Assessment Type
Practical Assessment

Task Description
Students will implement a revised specification for Assignment 1. New requirements will include conformance to the MVC (Model View Controller) pattern. The specification of the system to be built (including the design document) will be provided on the unit web site.

Assessment Due Date
Week 11 Friday (28 Sept 2018) 11:45 pm AEST

Return Date to Students

Two weeks after submission

Weighting
30%

Assessment Criteria

Criteria	Marks Available
Application class	2
Model + interface classes	6
View + interface classes	4
Controller class	2
Layer interactions (Application/MVC, V/C, C/M, M/V, M/database)	8
Source code documentation / variable naming / code layout	3
Package structure	1
Acceptance tests (0 if any test fails)	4
Total	**30**

Referencing Style

- Harvard (author-date)

Submission
Online

assessmentOutcome

- Apply the principles of software design
- Employ Unified Modeling Language (UML) and design patterns in the design and documentation of software systems
- Design, develop, and test non-distributed, three layered software applications
- Exploit the software engineering life cycle support functionality provided by modern software development environments.

assessmentGradAttribute

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

Examination

Outline
Complete an invigilated examination.

Date
During the examination period at a CQUniversity examination centre.

Weighting
50%

Length
180 minutes

Exam Conditions
Open Book.

Materials
Dictionary - non-electronic, concise, direct translation only (dictionary must not contain any notes or comments).

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assessmentOutcome

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assessmentGradAttribute

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