COIT13230 *Application Development Project*
Term 2 - 2022

Profile information current as at 19/04/2024 09:21 pm

All details in this unit profile for COIT13230 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 is the capstone project for the application development major of the Bachelor of Information Technology (BIT) course. You are required to synthesise and apply your skills developed across the units studied previously. This unit will help you to consolidate your competence with a relevant set of software engineering concepts, practices, and tools. To achieve this, you will work in small teams with a designated customer to identify a problem and develop a software application application adhering to software engineering principles and standards. You will document and present the requirement analysis, design artifacts, and the results from software testing. In addition to the documented application, your team will also identify and produce the project management and quality assurance components required to ensure that the project is delivered within specified project outcome parameters. You will also evaluate and discuss your contribution to the project team and the overall team performance.

Details

Career Level: *Undergraduate*
Unit Level: *Level 3*
Credit Points: *12*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.25*

Pre-requisites or Co-requisites

Pre-requisite: COIT12200, (COIT12207 or COIT13224) and (COIT12208 or COIS13064) Co-requisite: COIT13229 and COIT13234
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 - 2022

- Brisbane
- Cairns
- Melbourne
- Online
- Rockhampton
- Sydney
- Townsville

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 12-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 25 hours of study per week, making a total of 300 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: 15%
2. **Written Assessment**
Weighting: 10%
3. **Written Assessment**
Weighting: 25%
4. **Project (applied)**
Weighting: 40%
5. **Presentation**
Weighting: 10%

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 Evaluations

Feedback
Students enjoyed having real world projects and meeting real clients.

Recommendation
Continue to provide real-world projects.

Feedback from Student Evaluations

Feedback
Students wanted a cross-campus, mid-term presentation so students could compare themselves with all other groups.

Recommendation
Consider cross-campus presentations during and at the end of term.

Feedback from Student Evaluations

Feedback
Students want more involvement with the real-world clients.

Recommendation
Add more meetings with clients.

Feedback from Student Evaluations

Feedback
Students want more conflict resolution support.

Recommendation
Include a review of conflict resolution strategies.

Feedback from Unit Coordinator Reflection

Feedback
There are not enough student project examples.

Recommendation
Add more student project examples.

Unit Learning Outcomes

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

1. Apply software engineering processes, including requirement analysis, application software design, algorithm design, coding and debugging, software testing, and software project management.
2. Manage a software development project, particularly the scheduling of time and resources, development of risk mitigation strategies, and the generation of supporting documentation
3. Develop and implement a quality management plan for a small software development project adhering to ethical responsibility
4. Communicate effectively by using written and oral presentation, understanding the needs of various stakeholders
5. Work effectively as part of a development team
6. Review and critically evaluate team and individual performance to reflect on the processes followed and identify areas for improvement.

Australian Computer Society (ACS) recognises the Skills Framework for the Information Age (SFIA). SFIA provides a consistent definition of ICT skills. SFIA is adopted by organisations, governments, and individuals in many countries and is increasingly 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 8. The SFIA code is included:

- Requirements definition and management (REQM)
- Programming/software development (PROG)
- Software Design (SWDN)
- Data modelling and design (DTAN)
- User experience evaluation (HSEV)
- Database design (DBDS)
- Systems integration and build (SINT)
- Testing (TEST)
- Configuration management (CFMG)
- Application support (ASUP)
- System installation and removal (HSIN)

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 - Written Assessment - 15%		•				
2 - Written Assessment - 10%					•	
3 - Written Assessment - 25%	•		•	•		
4 - Project (applied) - 40%	•	•	•		•	•
5 - Presentation - 10%				•		

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes					
	1	2	3	4	5	6
1 - Communication	•	•	•	•	•	•
2 - Problem Solving	•					
3 - Critical Thinking	•					•
4 - Information Literacy	•	•	•			
5 - Team Work	•	•			•	
6 - Information Technology Competence	•					
7 - Cross Cultural Competence				•	•	
8 - Ethical practice	•	•	•			
9 - Social Innovation	•					
10 - Aboriginal and Torres Strait Islander Cultures						

Textbooks and Resources

Textbooks

There are no required textbooks.

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- JDK 11 - OpenJDK
- Apache NetBeans IDE 12.4 (available from https://netbeans.apache.org/download/nb124/nb124.html)
- Scene Builder 12 or later available from https://gluonhq.com/products/scene-builder/
- MySQL Community Server 8.0.26 (available from https://dev.mysql.com/downloads/mysql/)
- JavaFX 11.0.12 (available from https://gluonhq.com/products/javafx/)
- Apache TomEE 8.0.0 TomEE Plus (available from https://tomee.apache.org/download.html)
- Jakarta EE 8 (available from https://jakarta.ee/release/8/)

Referencing Style

All submissions for this unit must use the referencing styles below:

- Harvard (author-date)
- American Psychological Association 7th Edition (APA 7th edition)

For further information, see the Assessment Tasks.

Teaching Contacts

Lily Li Unit Coordinator
l.li@cqu.edu.au

Schedule

Week 1 - 11 Jul 2022

Module/Topic	Chapter	Events and Submissions/Topic
Project Management and Project Planning	Reference book: Software Engineering by Ian Sommerville Chapter 1 Section 1.2 Software Engineering Ethics Chapter 22 22.1 Risk Management 22.3 Teamwork Chapter 23 23.2 Plan-driven development 23.3 Project Scheduling	Form groups & topic exploration

Week 2 - 18 Jul 2022

Module/Topic	Chapter	Events and Submissions/Topic

Requirements Engineering and Quality Management	Reference book: Software Engineering by Ian Sommerville Chapter 23 23.4 Agile Planning Chapter 4 4.1 Requirements elicitation Chapter 5 5.1 Context Models Chapter 24 24.2 Software Standards 24.4 Quality Management and Agile Development	Read the recommended sections of the reference Textbook and apply the principles in your project plan.

Week 3 - 25 Jul 2022

Module/Topic	Chapter	Events and Submissions/Topic
System Modeling	Reference book: Software Engineering by Ian Sommerville Chapter 5 5.2 Interaction models	**Project Proposal and Project Plan** Due: Week 3 Friday (29 July 2022) 11:45 pm AEST

Week 4 - 01 Aug 2022

Module/Topic	Chapter	Events and Submissions/Topic
Requirements Engineering and Architectural Design	Reference book: Software Engineering by Ian Sommerville Chapter 4 4.1 Functional and Non-Functional Requirements 4.4 Requirements Specification Chapter 6 6.3 Architectural Patterns	

Week 5 - 08 Aug 2022

Module/Topic	Chapter	Events and Submissions/Topic
Object-Oriented Design and Testing	Reference book: Software Engineering by Ian Sommerville Chapter 7 7.1 Object-Oriented design using the UML Chapter 8 8.2 Test-driven development	

Vacation Week - 15 Aug 2022

Module/Topic	Chapter	Events and Submissions/Topic

Week 6 - 22 Aug 2022

Module/Topic	Chapter	Events and Submissions/Topic

Week 7 - 29 Aug 2022

Module/Topic	Chapter	Events and Submissions/Topic
System Implementation	Reference book: Software Engineering by Ian Sommerville Chapter 7 7.3 Implementation Issues	**Project Requirements Specification and Design** Due: Week 7 Monday (29 Aug 2022) 9:00 am AEST

Week 8 - 05 Sep 2022

Module/Topic	Chapter	Events and Submissions/Topic
System Implementation		

Week 9 - 12 Sep 2022

Module/Topic	Chapter	Events and Submissions/Topic

Configuration management	Reference book: Software Engineering by Ian Sommerville Chapter 24 24.3 Reviews and Inspections Chapter 25 25.2 System Building	

Week 10 - 19 Sep 2022

Module/Topic	Chapter	Events and Submissions/Topic
Software Testing	Reference book: Software Engineering by Ian Sommerville Chapter 8 8.3 Release Testing 8.4 User Testing	

Week 11 - 26 Sep 2022

Module/Topic	Chapter	Events and Submissions/Topic

Week 12 - 03 Oct 2022

Module/Topic	Chapter	Events and Submissions/Topic
		Final Project - software and report Due: Week 12 Friday (7 Oct 2022) 11:45 pm AEST

Review/Exam Week - 10 Oct 2022

Module/Topic	Chapter	Events and Submissions/Topic
Project Presentation		

Exam Week - 17 Oct 2022

Module/Topic	Chapter	Events and Submissions/Topic

Term Specific Information

Unit Coordinator: Dr Lily Li
Email: l.li@cqu.edu.au
Phone: 07 4923 2267

Assessment Tasks

1 Project Proposal and Project Plan

Assessment Type
Written Assessment

Task Description
This is a group assessment. In this assessment, you should clearly define the scope of the project you will be undertaking as a team. You should create a context diagram illustrating the main components of your proposed software application. You should include the following sections in your written submission.

1. A Use case diagram showing the main use cases of the software application to be developed.
2. User Requirements.
3. A preliminary project schedule showing the main tasks, completion times, and milestones, and team members responsible for the tasks.
4. Risk management plan
5. Quality Assurance plan

Further details and guidelines to complete this task will be provided on the unit website.

Assessment Due Date
Week 3 Friday (29 July 2022) 11:45 pm AEST

Return Date to Students
Week 5 Friday (12 Aug 2022)

Weighting
15%

Assessment Criteria

1. Clear concise and feasible scope of project
2. Clear identification of system components and interaction
3. Appropriate identification of use cases
4. Feasible project schedule with tasks, time, and responsible team member
5. Correct identification of software tools to be used in the project development
6. Clear identification of risks and risk mitigation strategy
7. Appropriate selection of quality standards and software engineering ethical guidelines.

Please refer to the unit website for the details.

Referencing Style

- Harvard (author-date)
- American Psychological Association 7th Edition (APA 7th edition)

Submission
Online Group

Submission Instructions
One Word document is submitted by the team leader. One team one submission.

Learning Outcomes Assessed

- Manage a software development project, particularly the scheduling of time and resources, development of risk mitigation strategies, and the generation of supporting documentation

2 Periodic Project Progress Reports

Assessment Type
Written Assessment

Task Description
This is an individual assessment. Each team member is required to submit four Periodic Project Progress Reports (2A, 2B, 2C, and 2D). The progress reports 2A, and 2B weigh 2 marks each and the other two progress reports 2C, and 2D weigh 3 marks each (totaling 10 marks for all project progress reports). All four reports must be written using the standard template file provided in the Moodle Unit website. The detailed specification of this assessment will be provided in the Moodle Unit website. The submission due dates for all 4 progress reports are as below:

Project Progress Report 1 (Assessment 2A)	Friday of Week 5 (11:45 pm AEST)
Project Progress Report 2 (Assessment 2B)	Friday of Week 7 (11:45 pm AEST)
Project Progress Report 3 (Assessment 2C)	Friday of Week 9 (11:45 pm AEST)
Project Progress Report 4 (Assessment 2D)	Friday of Week 11 (11:45 pm AEST)

Assessment Due Date

Due in Weeks 5,7,9,&11, as per instruction on the unit website.

Return Date to Students

Marked reports will be returned one week after submission.

Weighting
10%

Assessment Criteria
Please refer to the unit website for the details.

Referencing Style

- Harvard (author-date)
- American Psychological Association 7th Edition (APA 7th edition)

Submission
Online

Submission Instructions
One Word document is submitted by each individual student.

Learning Outcomes Assessed

- Work effectively as part of a development team

3 Project Requirements Specification and Design

Assessment Type
Written Assessment

Task Description
This Assessment contains a written document and an in-class group oral presentation. The written document include:

1. Functional and non-functional requirements
2. Use-case diagrams
3. Use case scenarios
4. Software architecture
5. Subsystem models and sequence models
6. Entity Relationship Diagrams
7. User interface Designs
8. Mapping of Requirements to use-cases

Assessment Due Date
Week 7 Monday (29 Aug 2022) 9:00 am AEST
In-class presentations will take place in Week 7 and this will be organised by the local lecturer or tutor.

Return Date to Students
Week 9 Monday (12 Sept 2022)
The marked assessments will be returned within two weeks.

Weighting
25%

Assessment Criteria

1. Clear identification of use cases that align with the defined scope of the project
2. Correct identification of functional requirements following the use cases
3. Appropriately chosen quality standards suitable for the application domain
4. Correct and clear identification of non-functional requirements that can comply with the quality standards
5. Correctly illustrated software architecture showing main components
6. Clearly written use-case scenarios
7. Correct sequence diagrams illustrating the important sequences of operation
8. The PPT and the oral presentation are clearly delivered in the class.

Please refer to the unit website for the details.

Referencing Style

- Harvard (author-date)
- American Psychological Association 7th Edition (APA 7th edition)

Submission
Online Group

Submission Instructions
One Word document and one PPT file are submitted by the team leader of the team.

Learning Outcomes Assessed

- Apply software engineering processes, including requirement analysis, application software design, algorithm design, coding and debugging, software testing, and software project management.
- Develop and implement a quality management plan for a small software development project adhering to ethical responsibility
- Communicate effectively by using written and oral presentation, understanding the needs of various stakeholders

4 Final Project - software and report

Assessment Type
Project (applied)

Task Description
This assessment has two components - the source code of the final software application and the written reports, as follows:

- Source code of the final project - **one member of each team must submit** the completed software application source code files and binary file(s) (.jar or .war) for the fully executable software application.
- Final project report - **all group members should submit** the final project report which is a Word document file. The final project report should contain the revised project scope, requirements specification, design, test plan, evidence of testing, user manual, and teamwork details.

Please refer to the unit website for the details.

Assessment Due Date
Week 12 Friday (7 Oct 2022) 11:45 pm AEST
One software source code package is submitted by the team leader. One final project report is submitted by each member of each team.

Return Date to Students

Marked assessment results will be available on the certification day of Term 2.

Weighting
40%

Assessment Criteria

1. Completely developed software application as per the defined scope and any changes
2. Correct functioning of the developed application as per the functional requirements and use cases
3. User interface adhering to the designed User Interface Design Principles
4. Adherence to planned quality standards

Please refer to the unit website for the details.

Referencing Style

- Harvard (author-date)
- American Psychological Association 7th Edition (APA 7th edition)

Submission
Online

Submission Instructions
Submit one zip file containing source code files and distributable application (.jar or .war) by one of the team members. Submit also the final report document file (.doc or .docx) by all team members.

Learning Outcomes Assessed

- Apply software engineering processes, including requirement analysis, application software design, algorithm design, coding and debugging, software testing, and software project management.
- Manage a software development project, particularly the scheduling of time and resources, development of risk mitigation strategies, and the generation of supporting documentation
- Develop and implement a quality management plan for a small software development project adhering to ethical responsibility
- Work effectively as part of a development team
- Review and critically evaluate team and individual performance to reflect on the processes followed and identify areas for improvement.

5 Project Presentation

Assessment Type
Presentation

Task Description
This is an individual assessment. You should deliver an oral presentation of one part of your project to an audience including the cohort of students and staff in this unit, industry representatives, and students and staff from the School of Engineering and Technology. Each of you should prepare formal presentation slides such a way that the presentations

by all group members should provide the complete project presentation to the audience.

Assessment Due Date

The exact time of presentation will be informed nearing to the date. You should make yourself available for the whole day.

Return Date to Students

The results will be available on the certification day of Term 2

Weighting
10%

Assessment Criteria
You should consider the following aspects for your presentation.

1. Clearly written formal presentation slides
2. Clear expression of ideas
3. Convincing arguments
4. Consideration of technical and non-technical audience in usage of terms.

Please refer to the unit website for the details.

Referencing Style

- Harvard (author-date)
- American Psychological Association 7th Edition (APA 7th edition)

Submission
Online

Submission Instructions
All group members should submit presentation slides in one pdf (.pdf) file.

Learning Outcomes Assessed

- Communicate effectively by using written and oral presentation, understanding the needs of various stakeholders

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