



# COIT20273 Software Design and Development Project

## Term 1 - 2018

Profile information current as at 29/04/2024 10:05 am

All details in this unit profile for COIT20273 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 design, develop and test a software application to meet quality characteristics of functionality, usability, maintainability and dependability. In this capstone project, you are required to synthesise and demonstrate your technical and generic skills developed across the Master of Information Technology and the software design and development major. You will work in small teams under supervision to identify the requirements of the users and to develop working computational solutions. You will produce typical project management artifacts associated with a project to ensure that the project is delivered within specified project outcome parameters. Emerging technologies and current research issues will support your design choices.

### Details

Career Level: *Postgraduate*

Unit Level: *Level 9*

Credit Points: 12

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.25

### Pre-requisites or Co-requisites

Pre-requisites: PPMP20007 Project Management Concepts COIT20258 Software Design: Principles, Models, and Patterns

Co-requisites: COIT20259 Enterprise Computing Architecture COIT20257 Distributed Systems: Principles and Development

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 12-credit Postgraduate 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: 8%

#### 3. **Presentation and Written Assessment**

Weighting: 10%

#### 4. **Practical and Written Assessment**

Weighting: 15%

#### 5. **Presentation and Written Assessment**

Weighting: 30%

#### 6. **Written Assessment**

Weighting: 22%

### 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 Self reflection

##### Feedback

More authentic projects would be better

##### Recommendation

More industry engagement is recommended.

## Unit Learning Outcomes

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

1. Apply a systems engineering process, including requirement analysis, application software design, algorithm design, coding and debugging, software testing, and software project management, informed by research into best practice.
2. Demonstrate professional standards of software development including technical skills, documentation, software quality assurance, risk mitigation strategies and ethics.
3. Plan and manage the software development project, particularly the scheduling of time and resources and the generation of supporting documentation.
4. Work collaboratively as part of a productive team.
5. Communicate effectively by using written and oral presentation, understanding the needs of various stakeholders.
6. Review and critically evaluate team and individual performance, reflecting on the processes followed and identifying areas for improvement.

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. The SFIA code is included:

- Software Development Process Improvement (SPIM)
- Project Management (PRMG)
- Systems Design (DESN)
- Systems integration (SINT)
- Program ming/Software Development (PROG)
- Data Analysis (DTAN)
- Database/Repository Design (DBDS)
- System development management (DLMG)
- Testing (TEST)
- Release and deployment (RELM)
- Application support (ASUP).

## Alignment of Learning Outcomes, Assessment and Graduate Attributes



### Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes					
	1	2	3	4	5	6
1 - Written Assessment - 15%	•		•	•	•	•
2 - Written Assessment - 8%		•	•			•
3 - Presentation and Written Assessment - 10%	•	•		•	•	
4 - Practical and Written Assessment - 15%	•	•		•	•	•
5 - Presentation and Written Assessment - 30%	•	•	•	•	•	
6 - Written Assessment - 22%	•	•		•	•	•

## 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 - Written Assessment - 15%	○	○	○	○	○			
2 - Written Assessment - 8%	○	○			○		○	
3 - Presentation and Written Assessment - 10%	○	○	○	○	○	○	○	
4 - Practical and Written Assessment - 15%	○	○	○	○	○	○	○	
5 - Presentation and Written Assessment - 30%	○	○	○			○		

Assessment Tasks	Graduate Attributes							
	1	2	3	4	5	6	7	8
<b>6 - Written Assessment - 22%</b>	○	○		○	○	○	○	

## 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)
- 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

**Lily Li** Unit Coordinator

[l.li@cqu.edu.au](mailto:l.li@cqu.edu.au)

## Schedule

### Week 1 - 05 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
Workshop <ul style="list-style-type: none"> <li>• Identify project title.</li> <li>• SCRUM - Agile software project management method.</li> </ul>		Form groups Identify roles in the team (Scrum Master, developer, client).

### Week 2 - 12 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
Workshop <ul style="list-style-type: none"> <li>• Project planning</li> <li>• SCRUM</li> </ul>		Communicate with the client, identify user stories, prioritize user stories, decide the iterations and the length of each milestone.

### Week 3 - 19 Mar 2018

Module/Topic	Chapter	Events and Submissions/Topic
Workshop <ul style="list-style-type: none"> <li>• Project planning</li> </ul>		Submit assessment item 1 - project proposal and plan  <b>Project proposal and project plan</b> Due: Week 3 Friday (23 Mar 2018) 11:45 pm AEST

**Week 4 - 26 Mar 2018**

Module/Topic	Chapter	Events and Submissions/Topic
Workshop Requirements specification including use cases, user stories, project charter, product backlog for software release 1.0.		Submit assessment item 2 (a) - progress report 1

**Week 5 - 02 Apr 2018**

Module/Topic	Chapter	Events and Submissions/Topic
Workshop Product backlog and SRS		Submit assessment item 3 - requirements specification v1.0  <b>Requirement specification</b> Due: Week 5 Friday (6 Apr 2018) 11:45 pm AEST

**Vacation Week - 09 Apr 2018**

Module/Topic	Chapter	Events and Submissions/Topic
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**Week 6 - 16 Apr 2018**

Module/Topic	Chapter	Events and Submissions/Topic
Workshop • Software Design		Submit assessment item 2 (b) - progress report 2 Submit assessment item 4 - design document v1.0.  <b>Design document</b> Due: Week 6 Friday (20 Apr 2018) 11:45 pm AEST

**Week 7 - 23 Apr 2018**

Module/Topic	Chapter	Events and Submissions/Topic
Workshop		Implementation, review, feedback from client. Update the requirement specification and design document if needed. Re-prioritise product backlog items.

**Week 8 - 30 Apr 2018**

Module/Topic	Chapter	Events and Submissions/Topic
Workshop		Submit assessment item 2 (c) - progress report 3 Implementation, review, feedback from client. Update the requirement specification and design document if needed. Re-prioritise product backlog items.

**Week 9 - 07 May 2018**

Module/Topic	Chapter	Events and Submissions/Topic
Workshop		Implementation, review, feedback from client. Update the requirement specification and design document if needed. Re-prioritise product backlog items.

**Week 10 - 14 May 2018**

Module/Topic	Chapter	Events and Submissions/Topic
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Workshop

Submit assessment item 2 (d) - progress report 4  
Submit assessment item 5 - Submit the final Implementation Document including updated Requirements Specification and Design Document.

**Implementation document and presentation** Due: Week 10 Friday (18 May 2018) 11:45 pm AEST

#### Week 11 - 21 May 2018

Module/Topic	Chapter	Events and Submissions/Topic
Workshop		Project presentation

#### Week 12 - 28 May 2018

Module/Topic	Chapter	Events and Submissions/Topic
Workshop		Submit assessment item 6 - Project review and final submission (Submit final project report and related files)  <b>Project Review and Project Portfolio</b> Due: Week 12 Monday (28 May 2018) 11:45 pm AEST

#### Review/Exam Week - 04 Jun 2018

Module/Topic	Chapter	Events and Submissions/Topic
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#### Exam Week - 11 Jun 2018

Module/Topic	Chapter	Events and Submissions/Topic
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## Assessment Tasks

### 1 Project proposal and project plan

#### Assessment Type

Written Assessment

#### Task Description

This assessment item is designed to test your skills in project initiation and planning including project scoping, resource scheduling, quality assurance planning, risk mitigation, collaboration, and documentation.

#### Assessment Due Date

Week 3 Friday (23 Mar 2018) 11:45 pm AEST

#### Return Date to Students

Week 5 Monday (2 Apr 2018)

Feedback will be returned within two weeks of submission

#### Weighting

15%

#### Assessment Criteria

Well documented project plan which includes main objectives, scope and constraints of the project, system architecture, hardware and software requirements, project organisation, work breakdown structure, project schedule, monitoring and reporting system, and risk plan and quality assurance plan.

The detailed marking guide is available on the unit website.

#### Referencing Style

- [Harvard \(author-date\)](#)

#### Submission

Online

**Submission Instructions**

Refer to the unit website for submission details

**Learning Outcomes Assessed**

- Apply a systems engineering process, including requirement analysis, application software design, algorithm design, coding and debugging, software testing, and software project management, informed by research into best practice.
- Plan and manage the software development project, particularly the scheduling of time and resources and the generation of supporting documentation.
- Work collaboratively as part of a productive team.
- Communicate effectively by using written and oral presentation, understanding the needs of various stakeholders.
- Review and critically evaluate team and individual performance, reflecting on the processes followed and identifying areas for improvement.

**Graduate Attributes**

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Research
- Self-management

## 2 Project reports 2a - 2d

**Assessment Type**

Written Assessment

**Task Description**

This assessment item consists of 4 progress reports over the term. It is designed to test your skills in project management including quality assurance, resource scheduling, risk mitigation, collaboration, and documentation.

**Assessment Due Date**

Refer to the unit website for the submission details.

**Return Date to Students**

Feedback will be returned within one week of submission

**Weighting**

8%

**Assessment Criteria**

The progress reports should include a review of project schedule, quality assurance, and risk mitigation strategies providing corrective measures for any deviation.

The detailed marking guide is available on the unit website.

**Referencing Style**

- [Harvard \(author-date\)](#)

**Submission**

Online

**Submission Instructions**

Refer to the unit website for the submission details.

**Learning Outcomes Assessed**

- Demonstrate professional standards of software development including technical skills, documentation, software quality assurance, risk mitigation strategies and ethics.
- Plan and manage the software development project, particularly the scheduling of time and resources and the generation of supporting documentation.
- Review and critically evaluate team and individual performance, reflecting on the processes followed and identifying areas for improvement.

**Graduate Attributes**

- Knowledge



- Communication
- Self-management
- Leadership

### 3 Requirement specification

#### Assessment Type

Presentation and Written Assessment

#### Task Description

This assessment task is designed to test your skills in software requirement analysis. Your group will present your work in written documentation and oral presentation.

#### Assessment Due Date

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

Oral Presentations for internal students will take place during the scheduled workshop in Week 5. External students need to arrange a time and date during Week 5 in consultation with your tutor.

#### Return Date to Students

Week 7 Monday (23 Apr 2018)

Feedback will be returned within 1 week of submission. Results will be returned in Week 12.

#### Weighting

10%

#### Assessment Criteria

The requirement specification should include documentation depicting completed tasks of functional and non-functional requirements analysis, use cases (UML), and mapping of use cases to requirements. The detailed marking guide is available on the unit website.

#### Referencing Style

- [Harvard \(author-date\)](#)

#### Submission

Online

#### Submission Instructions

Refer to the unit website for the submission details.

#### Learning Outcomes Assessed

- Apply a systems engineering process, including requirement analysis, application software design, algorithm design, coding and debugging, software testing, and software project management, informed by research into best practice.
- Demonstrate professional standards of software development including technical skills, documentation, software quality assurance, risk mitigation strategies and ethics.
- Work collaboratively as part of a productive team.
- Communicate effectively by using written and oral presentation, understanding the needs of various stakeholders.

#### Graduate Attributes

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

### 4 Design document

#### Assessment Type

Practical and Written Assessment

#### Task Description

The design document should include documentation on completed design of software architecture, database, and user interface. It should also include documentation on completed development of modelling for software layers, classes, and behaviour, and interactions of User Interface/Application

Layer and Application Layer/Data access layer.

**Assessment Due Date**

Week 6 Friday (20 Apr 2018) 11:45 pm AEST

**Return Date to Students**

Week 8 Monday (30 Apr 2018)

Feedback will be returned within 1 week of submission. Results will be returned in Week 12.

**Weighting**

15%

**Assessment Criteria**

The design document should include documentation on completed design of software architecture, database, and user interface. It should also include documentation on completed development of modelling for software layers, classes, and behaviour, and interactions of User Interface/Application Layer and Application Layer/Data access layer.

The detailed marking guide is available on the unit website.

**Referencing Style**

- [Harvard \(author-date\)](#)

**Submission**

Online

**Submission Instructions**

Refer to the unit website for the submission details.

**Learning Outcomes Assessed**

- Apply a systems engineering process, including requirement analysis, application software design, algorithm design, coding and debugging, software testing, and software project management, informed by research into best practice.
- Demonstrate professional standards of software development including technical skills, documentation, software quality assurance, risk mitigation strategies and ethics.
- Work collaboratively as part of a productive team.
- Communicate effectively by using written and oral presentation, understanding the needs of various stakeholders.
- Review and critically evaluate team and individual performance, reflecting on the processes followed and identifying areas for improvement.

**Graduate Attributes**

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

## 5 Implementation document and presentation

**Assessment Type**

Presentation and Written Assessment

**Task Description**

This assessment task is used to test your skills in algorithm design, coding and debugging, software testing, effective collaboration and quality documentation meeting scheduled project timelines and following requirements specification. Students will demonstrate their project implementation using oral presentation.

**Assessment Due Date**

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

Refer to the unit website for the submission details.

**Return Date to Students**

Week 12 Monday (28 May 2018)

Feedback will be returned within two weeks of submission.

**Weighting**

30%

**Assessment Criteria**

Submission should include a working software application as per the design, testing documentation following the test plan, documented source code, mapping of design to implementation, and installation and user manual.

The oral presentation will be scheduled in Week 11.

The detailed marking guide is available on the unit website.

**Referencing Style**

- [Harvard \(author-date\)](#)

**Submission**

Online

**Submission Instructions**

Refer to the unit website for the submission details.

**Learning Outcomes Assessed**

- Apply a systems engineering process, including requirement analysis, application software design, algorithm design, coding and debugging, software testing, and software project management, informed by research into best practice.
- Demonstrate professional standards of software development including technical skills, documentation, software quality assurance, risk mitigation strategies and ethics.
- Plan and manage the software development project, particularly the scheduling of time and resources and the generation of supporting documentation.
- Work collaboratively as part of a productive team.
- Communicate effectively by using written and oral presentation, understanding the needs of various stakeholders.

**Graduate Attributes**

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

## 6 Project Review and Project Portfolio

**Assessment Type**

Written Assessment

**Task Description**

This assessment requires you to submit the updated requirements specification and updated design documents. You also need to conduct a project review including reflections.

**Assessment Due Date**

Week 12 Monday (28 May 2018) 11:45 pm AEST

Refer to the unit website for the submission details.

**Return Date to Students**

Certification date (required for non-exam units)

**Weighting**

22%

**Assessment Criteria**

You should submit the updated requirements, update design document, project review and reflections.

The detailed marking guide is available on the unit website.

**Referencing Style**

- [Harvard \(author-date\)](#)

**Submission**

Online

**Submission Instructions**

Refer to the unit website for the submission details.

**Learning Outcomes Assessed**

- Apply a systems engineering process, including requirement analysis, application software design, algorithm design, coding and debugging, software testing, and software project management, informed by research into best practice.
- Demonstrate professional standards of software development including technical skills, documentation, software quality assurance, risk mitigation strategies and ethics.
- Work collaboratively as part of a productive team.
- Communicate effectively by using written and oral presentation, understanding the needs of various stakeholders.
- Review and critically evaluate team and individual performance, reflecting on the processes followed and identifying areas for improvement.

**Graduate Attributes**

- Knowledge
- Communication
- Research
- Self-management
- Ethical and Professional Responsibility
- Leadership

## 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