COIT20272 *Mobile App Development Project*
Term 1 - 2024

Profile information current as at 01/05/2024 03:40 pm

General Information

Overview

In this integrative capstone project, you will develop a significant and authentic mobile application. Specifically, you will employ the technical and professional skills that you have developed in your course of study to contribute to the development of an authentic web, hybrid, or native app. You will apply a relevant software engineering methodology, taking into account best practices in testing, quality assurance, and cyber security. You are required to use and document typical project management processes to ensure that the project is delivered on time and within budget.

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: COIT20268 Responsive Web Design, COIT20269 Mobile Web Apps, COIT20270 App Development for Mobile Platforms, PPMP20007 Project Management Concepts, COIT20246 Networking and Cyber Security.
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 - 2024

- Brisbane
- Melbourne
- Online
- 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: 10%
2. **Written Assessment**
Weighting: 15%
3. **Written Assessment**
Weighting: 10%
4. **Practical and Written Assessment**
Weighting: 40%
5. **Presentation and Written Assessment**
Weighting: 25%

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 Unit Coordinator reflection

Feedback

The unit requires students to progressively develop a prototype, and avoids excessive number of written reports, allowing students more time for development.

Recommendation

Keep the main focus on prototype development rather than producing excessive amount of written reports.

Feedback from Unit Coordinator reflection

Feedback

Use of state-of-the-art tools would enable students to accelerate development of quality mobile applications.

Recommendation

Mandate the use of state-of-the-art tools, such as Figma for user interface design and Bootstrap for HTML page design.

Unit Learning Outcomes

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

1. Apply a systems engineering process in the context of mobile application development, 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, cyber security best practices, 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 and understanding the needs of various stakeholders
6. Critically review individual and team performance, along with identifying areas for improvement.

The Australian Computer Society (ACS), the professional association for Australia's ICT sector, recognises the Skills Framework for the Information Age (SFIA). SFIA is adopted by organisations, governments, and individuals in many 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.
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)
- Database design (DBDS)
- Data modelling and design (DTAN)
- Systems integration and build (SINT)
- Configuration management (CFMG)
- Testing (TEST)
- Research (RSCH)
- User experience evaluation (USEV)
- Application support (ASUP)
- System installation and removal (HSIN)
- Systems and software life cycle engineering (SLEN)
- Information security (SCTY)

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 - Presentation and Written Assessment - 25%		•			•	
4 - Practical and Written Assessment - 40%		•			•	
5 - Written Assessment - 10%				•		•

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						

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)
- Android Studio (latest version)
- Zoom (both microphone and webcam capability)
- Visual Studio Code (latest version)
- Gradle (latest version)
- MySQL Database Server or SQLite database

Referencing Style

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

Teaching Contacts

Salahuddin Azad Unit Coordinator
s.azad@cqu.edu.au

Schedule

Week 1 - 04 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to Software Engineering	Chapter 1 • Section 1.1 What is Software Engineering? • Section 1.2 Software Engineering Life-cycle • Section 1.4 The Object Model	• Form project group, identify and discuss project topic

Week 2 - 11 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Object Oriented Software Engineering	Chapter 2 • Section 2.1 Software Development Methods • Section 2.2 Requirement Engineering • Section 2.3 Software Architecture	• Finalize project topic and scope • Work on project proposal

Week 3 - 18 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Use Case Analysis and Modeling	Chapter 2 Section 2.4 Use Case Modeling	• Finalize project proposal • Submit project proposal **Project Proposal** Due: Week 3 Friday (22 Mar 2024) 11:45 pm AEST

Week 4 - 25 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Use Case Analysis and Modeling	Continue Chapter 2 Section 2.4 Use Case Modeling	Work on: • detailed user stories, • user interfaces, • data structures, • database schema, • software architecture, • platforms/tools/frameworks, • test plan,and • project tracking tool

Week 5 - 01 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
Use Case Analysis and Modeling	Chapter 2 • Focus on design and class diagrams • Focus on software testing (2.6 Test-driven implementation)	• Submit Progress Report 1 **Progress Report 1** Due: Week 5 Friday (5 Apr 2024) 11:45 pm AEST

Vacation Week - 08 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
Enjoy the break.		

Week 6 - 15 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
Modeling and System Specification	Chapter 3 Section 3.1 What is a system? Section 3.2 Notation for System Specification	• Setup and configure platforms/frameworks/runtime environments • Create and populate database • Commence prototype development • Create user interface mockups • Create API stubs • Track project progress • Submit Progress Report 2 **Progress Report 2** Due: Week 6 Friday (19 Apr 2024) 11:45 pm AEST

Week 7 - 22 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
		• Work on prototype improvement • Test the prototype after each cycle • Receive customer feedback • Add, drop or modify user stories/features, if needed • Track project progress

Week 8 - 29 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
Advanced Topics	Chapter 9 Section 9.4 Software-as-a-Service (SaaS) Section 9.5 End user software development	• Demonstrate the current prototype in the class • Submit Prototype Demonstration Stage 1 update report **Prototype Demonstration Stage 1** Due: Week 8 Friday (3 May 2024) 11:45 pm AEST

Week 9 - 06 May 2024

Module/Topic	Chapter	Events and Submissions/Topic

		• Work on prototype improvement • Test the prototype after each cycle • Receive customer feedback • Add, drop or modify user stories/features, if needed • Track project progress

Week 10 - 13 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
		• Demonstrate the current prototype in the class • Submit Prototype Demonstration Stage 2 update report **Prototype Demonstration Stage 2** Due: Week 10 Friday (17 May 2024) 11:45 pm AEST

Week 11 - 20 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
		• Continue development of the mobile app • Perform integration test • Start developing the presentation

Week 12 - 27 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
		• Complete development of the mobile app • Complete user acceptance test • Complete presentation development and practice

Review/Exam Week - 03 Jun 2024

Module/Topic	Chapter	Events and Submissions/Topic
		• Deliver public presentation to demonstrate the final project outcomes **Public Presentation and Demonstration of Final Project Outcomes** Due: Review/Exam Week Monday (3 June 2024) 9:00 am AEST

Exam Week - 10 Jun 2024

Module/Topic	Chapter	Events and Submissions/Topic
This unit does not have any examination.		

Term Specific Information

Contact information for Dr Salahuddin Azad: Email: s.azad@cqu.edu.au; Office: Level 6, 120 Spencer Street, Melbourne Vic 3000; P +61 3 9616 0680 | X 50680.

If you have any queries, please email me and I will get back to you within one business day or so. For an individual discussion, please ring me during business hours (or leave a message if I am not in) and I will return your call as soon as possible.

Assessment Tasks

1 Project Proposal

Assessment Type
Written Assessment

Task Description
This is a **group** assessment. In general, all team members will receive the same mark in this assessment. However, if performance varies significantly across team members, individual marks can be awarded.

In this assessment, you are required to develop a project proposal for the development of a mobile application. The mobile application can be a native, or hybrid app. You should come up with an original or semi-original idea for a mobile application, which should have some business value.

The project proposal should be written into a document including the following 5 components or sections:

1. Project background
2. Project objective
3. High-level user requirements
4. Hardware and software requirements
5. Risk management and quality assurance plan

The detailed specification of this assessment will be provided on the Moodle unit website.

Assessment Due Date
Week 3 Friday (22 Mar 2024) 11:45 pm AEST
The assessment must be submitted to Moodle by the due date and time.

Return Date to Students
Week 5 Friday (5 Apr 2024)
The feedback will be returned within two weeks of the submission due date.

Weighting
10%

Assessment Criteria
The assessment criteria will be provided on the Moodle unit website.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
You must upload your project proposal as a Microsoft Word document which should include all components or sections outlined in the assessment specification. All group members must submit the same copy of the assignment.

Learning Outcomes Assessed

- 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

2 Progress Report 1

Assessment Type
Written Assessment

Task Description
This is a **group** assessment, however, individuals may receive different scores based on their contributions.

In this assessment, you are required to report progress on the following 8 items:

1. Detailed user stories
2. Wireframes of all user interfaces
3. Major data structures
4. Database schema
5. Software architecture illustrating all components
6. Platforms/languages/tools/frameworks

7. Test plan (should include user acceptance test)
8. Project tracking tool

The detailed specification of this assessment will be provided on the Moodle unit website.

Assessment Due Date
Week 5 Friday (5 Apr 2024) 11:45 pm AEST
The assessment must be submitted to Moodle by the due date and time.

Return Date to Students
Week 7 Friday (26 Apr 2024)
The feedback will be returned within two weeks of the submission due date.

Weighting
15%

Assessment Criteria
The assessment criteria will be provided on the Moodle unit website.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
You must upload your progress report as a Microsoft Word document which should include all components or sections outlined in the assessment specification. All group members must submit the same copy of the assignment.

Learning Outcomes Assessed

- Apply a systems engineering process in the context of mobile application development, 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

3 Progress Report 2

Assessment Type
Written Assessment

Task Description
This is a **group** assessment, however, individuals may receive different scores based on their contributions.

In this assessment, you are required to report your progress on the following 4 items:

1. Setup and configuration of platforms/frameworks/runtime environments
2. Database creation
3. Creation of user interface mockups on the client-side
4. Creation of API stubs on the server-side

A copy of the prototype source code must be maintained in a GitHub repository and a link to the repository must be included in the report. You are also required to show the evidence of tracking the progress of your project using a project tracking tool (e.g., Jira).

The detailed specification of this assessment will be provided on the Moodle unit website.

Assessment Due Date
Week 6 Friday (19 Apr 2024) 11:45 pm AEST
The assessment must be submitted to Moodle by the due date and time.

Return Date to Students
Week 8 Friday (3 May 2024)
The feedback will be returned within two weeks of the submission due date.

Weighting
10%

Assessment Criteria
The assessment criteria will be provided on the Moodle unit website.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
You must upload your progress report as a Microsoft Word document which should include all components or sections outlined in the assessment specification. All group members must submit the same copy of the assignment.

Learning Outcomes Assessed

- Work collaboratively as part of a productive team
- Critically review individual and team performance, along with identifying areas for improvement.

4 Demonstrations of Prototype

Assessment Type
Practical and Written Assessment

Task Description
This is a **group** assessment, however, individuals may receive different scores based on their contributions.

For this assessment, you will demonstrate the current prototype of your mobile application in the class as well as submit a brief update report on the progress. Demonstration of the prototype and submission of the update report will be done in two stages. The **Stage 1** demonstration and submission will be accomplished in **Week 8** and the **Stage 2** demonstration and submission will be accomplished in **Week 10**. Each stage carries **20 marks**.

In each stage of demonstration, you will run the current prototype of your mobile application in a lab computer/your personal computer/your mobile device to demonstrate the user stories/interfaces/features/business logic that have been fully or partially implemented during the current progress period. You are also required to show evidence of tracking the progress of your project using a project tracking tool (e.g., Jira).

In each update report, you will provide a brief update on the following 5 items for the current progress period:

1. User stories/interfaces/features/business logic implemented (provide screenshots)
2. Test results for the implemented user stories/interfaces/features/business logic (provide screenshots and annotations)
3. Errors/problems with the implemented user stories/interfaces/features/business logic (provide screenshots, if possible).
4. User stories or other features introduced (if any)
5. User stories or other features dropped or modified (if any)

A copy of the prototype source code must be maintained in a GitHub repository and a link to the repository must be included in the report.

The detailed specification of this assessment will be provided on the Moodle unit website.

Please note: This assessment task is selected to be included in your course-wide portfolio. The outcomes/artifacts of this assessment must be uploaded to Portfolium (https://portfolium.com/activity) by the submission due date in addition to your submission to Moodle for marking.

Assessment Due Date

Stage 1 update report must be submitted by Week 8 Friday (3 May 2024) 11:45 pm AEST. Stage 2 update report must be submitted by Week 10 Friday (17 May 2024) 11:45 pm AEST.

Return Date to Students

The feedback will be returned within two weeks of the corresponding submission due dates.

Weighting
40%

Assessment Criteria
The assessment criteria will be provided on the Moodle unit website.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
You must upload your update report as a Microsoft Word document. All group members must submit the same copy of the assignment.

Learning Outcomes Assessed

- Demonstrate professional standards of software development, including technical skills, documentation, software quality assurance, cyber security best practices, risk mitigation strategies, and ethics
- Communicate effectively by using written and oral presentation and understanding the needs of various stakeholders

5 Public Presentation and Demonstration of Final Project Outcomes

Assessment Type
Presentation and Written Assessment

Task Description
This is a **group** assessment. In general, all team members will receive the same mark in this assessment. However, if performance varies significantly across team members, individual marks can be awarded.

In this assessment, each group is required to present their final project outcomes in a public presentation. Each member of a group MUST take part in the presentation.

The presentation will cover:

1. Demonstration of a fully running mobile application
2. Presentation of the final project outcomes

Each group will have **15-20 minutes** to present the above items to the plenary.

With (1) above, it is advised that each group must install their mobile app on their mobile devices prior to the delivery of the presentation. The mobile app must be demonstrated during the presentation.

With (2) above, each group must also present all aspects of their mobile application development project covering the project background, objective, user stories, major data structures, database design, software architecture, platforms/tools/frameworks, test results (including user acceptance test), and lessons learnt. *You also need to present a brief security assessment of your app.*

The presentation session will be held on Monday in Review/Exam Week. The Head of Course or Unit Coordinator will schedule the time of presentation. You will have to make yourself available for the whole day on the day of presentation.

The detailed specification of this assessment will be provided on the Moodle unit website.

Please note: This assessment task is selected to be included in your course-wide portfolio. The outcomes/artifacts of this assessment must be uploaded to Portfolium (https://portfolium.com/activity) by the submission due date in addition to your submission to Moodle for marking.

Assessment Due Date
Review/Exam Week Monday (3 June 2024) 9:00 am AEST
The assignment must be submitted to Moodle by the above time and date.

Return Date to Students

The feedback will be returned on the day of certification of grades.

Weighting
25%

Assessment Criteria
The assessment criteria will be provided on the Moodle unit website.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
The submission should contain your presentation file, fully running mobile app, and a link to the GitHub repository of your source code. All group members must submit the same copy of the assignment.

Learning Outcomes Assessed

- Demonstrate professional standards of software development, including technical skills, documentation, software quality assurance, cyber security best practices, risk mitigation strategies, and ethics
- Communicate effectively by using written and oral presentation and 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