COIT20270 *App Development for Mobile Platforms*
Term 1 - 2021

Profile information current as at 14/12/2025 04:11 pm

All details in this unit profile for COIT20270 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 devoted to the design and implementation of Android and iOS mobile applications. Native mobile programming languages will form the basis upon which programming techniques and design patterns will be developed for creating standalone applications. Commonly used mobile tools and frameworks for mobile application development are used. All stages of software development from the initial idea, through to development and testing will be covered. Consideration will be given to the business case from the developers' point of view. Some examination of how to market mobile apps is also undertaken. Research skills will be introduced as a means of keeping up to date with the changing mobile development landscape.

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-Req: COIT20268 Responsive Web Design
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 - 2021

- 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 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: 30%
2. **Written Assessment**
Weighting: 20%
3. **Practical Assessment**
Weighting: 30%
4. **Portfolio**
Weighting: 20%

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 Evaluation

Feedback
Assignment requirements forced students to follow the hardwired coding standards learned in the unit

Recommendation
Review the assessment requirements to give students the flexibility to use some alternate models and programming techniques

Feedback from Unit Evaluation

Feedback
Subject content was too dense, leaving little time for students to complete and reflect on tutorial tasks before moving on to new concepts

Recommendation
Reduce complexity of the tutorial material by providing smaller and manageable development tasks and align these with the concepts

Unit Learning Outcomes

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

1. Design and implement native mobile applications
2. Describe and be able to develop critical parts of a native mobile system programming interface
3. Use an integrated IDE to build, debug and test native mobile applications
4. Determine the business impact of a given mobile solution and critically assess the implementation of an app and its likely marketability and profitability
5. Critically analyse a research issue in mobile computing.

The Australian Computer Society (ACS) 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 at
https://www.acs.org.au/professionalrecognition/mysfia-b2c.html
This unit contributes to the following workplace skills as defined by SFIA 7 (the SFIA code is included):

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

Alignment of Learning Outcomes, Assessment and Graduate Attributes

| — N/A Level | ○ Introductory Level | ● Intermediate Level | ● Graduate Level | ○ Professional Level | ○ Advanced Level |

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
1 - Portfolio - 20%		●		●	
2 - Practical Assessment - 30%	●		●		
3 - Practical Assessment - 30%	●		●	●	
4 - Written Assessment - 20%		●			●

Alignment of Graduate Attributes to Learning Outcomes

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

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes							
	1	2	3	4	5	6	7	8
1 - Portfolio - 20%	○	○			○			
2 - Practical Assessment - 30%	○		○		○			
3 - Practical Assessment - 30%	○		○		○			
4 - Written Assessment - 20%	○	○	○	○	○			

Textbooks and Resources

Textbooks
COIT20270

Prescribed

Android programming: the Big Nerd Ranch guide
(2017)
Authors: Phillips, Bill
Big Nerd Ranch Guides
Binding: eBook
COIT20270

Prescribed

iOS 13 Programming with Swift
Edition: 5th
Packt Publishing
Binding: eBook

Additional Textbook Information
Digital version is available @ CQU library. if you prefer studying with a paper copy, they can be ordered in at the CQUni Bookshop here; http://bookshop.cqu.edu.au (search on the Unit code)

View textbooks at the CQUniversity Bookshop

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Zoom.us
- Latest version Android Studio (with Marshmallow API 23) + 1 working AVD (virtual phone)
- MacinCloud Account for MS Windows users (will be provided by CQU)

Referencing Style

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

Teaching Contacts

Ayub Bokani Unit Coordinator
a.bokani@cqu.edu.au

Schedule

Week 1 - 08 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Introducing Android Application Development	Android Programming: Big Nerd Ranch Guide 3rd ed, Chapter 1-4	

Week 2 - 15 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Android Activities Fragments and Fragment Manager	Android Programming: Big Nerd Ranch Guide 3rd ed, Chapter 5-7	

Week 3 - 22 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Layouts and Widgets	Android Programming: Big Nerd Ranch Guide 3rd ed, Chapter 8 & 9	

Week 4 - 29 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Fragment Args and View Pager	Android Programming: Big Nerd Ranch Guide 3rd ed, Chapter 10 & 11	

Week 5 - 05 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Dialogs, menus and Database	Android Programming: Big Nerd Ranch Guide 3rd ed, Chapter 12 - 16	

Vacation Week - 12 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic

Week 6 - 19 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Location services and Maps Submitting to the Google Play Store	Android Programming: Big Nerd Ranch Guide 3rd ed, Chapter 33 and 34	**Assignment 1** Due: Week 6 Friday (23 Apr 2021) 11:45 pm AEST

Week 7 - 26 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Introducing Swift programming language Getting Started with Xcode 12 and Swift 5	iOS 13 & Swift 5 Programming: Chapter 1- 2	

Week 8 - 03 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Building the first iOS Application: Displaying Data in a UITableView	iOS 13 & Swift 5 Programming: Chapter 3	

Week 9 - 10 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Data structure: Working with JSON file	iOS 13 & Swift 5 Programming: Chapter 4	

Week 10 - 17 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Passing Data from one View Controller to Another	iOS 13 & Swift 5 Programming: Chapter 5	**Report** Due: Week 10 Friday (21 May 2021) 11:45 pm AEST

Week 11 - 24 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Persisting Data with Core Data	iOS 13 & Swift 5 Programming: Chapter 6	

Week 12 - 31 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Cross platform Mobile Application Development		**Assignment 2** Due: Week 12 Friday (4 June 2021) 11:45 pm AEST **Portfolio** Due: Week 12 Friday (4 June 2021) 11:45 pm AEST

Review/Exam Week - 07 Jun 2021

Module/Topic	Chapter	Events and Submissions/Topic

Term Specific Information

Unit Coordinator:
Dr. Ayub Bokani
a.bokani@cqu.edu.au

Assessment Tasks

1 Assignment 1

Assessment Type
Practical Assessment

Task Description
You are assigned the task of creating a data logger mobile application to capture the attribute values of a given object and store them in a local database using Android Studio and Java programming language. This assessment item relates to the learning outcome 1, 2 and 3, more specifically, to design and implement a complex mobile application. More details will be available on the Moodle site. You should also consult the weekly lecture/tutorials on the Moodle website for help and more information on completing the assignment.

Assessment Due Date
Week 6 Friday (23 Apr 2021) 11:45 pm AEST

Return Date to Students

Weighting
30%

Assessment Criteria

Assignment Component	Criteria	Marks	Total
MainActivity file	·The onBackPressed() method display the Save dialog·Pressing "OK" in the onBackPressed() method saves the SQLite database and exits.·The ArrayList values are set from the SQLite database entries on entry (2 marks).	4	
Fragment files	·The home, next and previous buttons work as required·The vehicle time/date buttons work as required·The vehicle log entries are saved by the Save Log Entry button·Errors are caught and appropriate messages displayed.·The profile page checks that the passwords match, no items are null and returns to the home fragment.·Show Log Entries button works and shows all entries for that vehicle type and returns to the correct page	7	
res/layout/xml andother files	·Items on fragments are in the correct positions w.r.t. each other·EditText items have the correct hints·Navigation buttons are in a line and of equal width·Labels are all as given in the specifications·The Vehicle class exists and is correct	5	
Menu options	·The Profile menu is present and works as specified·The Save entries menu saves the correct values to the database (2 marks)·The Send entries menu option clears the SQLite database and all the vehicle ArrayLists	4	
SQLite database	·The DBAdapter class is present and works correctly	2	

Sending App data	·Vehicle logger data copied to email·Message sent asynchronously using thread·ProgressDialog displayed and email received	3	
Documentation	·Hardware / Software requirements·Application commentary·Testing Strategy	3	
General	·Feedback given as required·Use appropriate naming conventions·Adequate commenting·Correct grammar·Citation of references, copyright use	2	
Penalties	5% = 1.5 marks per day for late submission		
	Total	30	

Referencing Style

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

Submission
Online

Learning Outcomes Assessed

- Design and implement native mobile applications
- Use an integrated IDE to build, debug and test native mobile applications

Graduate Attributes

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

2 Report

Assessment Type
Written Assessment

Task Description
Creating a mobile app is simply the start of the process to becoming an entrepreneur. To scale an application, you need to approach an investor. For example, $5000 per month would be bottom-line spending on social media and advertising.

It does not matter if you have working code and how good it is. There are a set of points an investor will require you to address before they will talk money.

To better understand this process, this assessment requires you to consider an issue in your local community. It may be anything from recycling to promoting sports or local tourism to managing parking spaces. Having researched and identified a problem complete the tasks below:

• Describe the problem in a clear and concise manner

• Look for the mobile apps on Google Play store and the Apple's App store and find the best **three** applications that address this problem (or address some aspect of the problem if that is all you can find). Do not use any large-scale applications such as any social media apps, YouTube, Google Maps, Uber etc.

• Critically review and analyse the strengths and weaknesses of each mobile application in respect to features, operation and layout.

• Propose a new app that would present a better solution in terms of its features, and also its design and layout. Include layout diagrams of your app. You may use low fidelity rough sketches (including as photos of sketches in your submission document) or any other drawing

• What are the points of difference (advantages/improvements) for your solution over existing solutions?

• Who is your target market?

• How will you reach/market to your target market? Justify your strategies.

• What ethical concerns would need to be addressed?

Submit a single word document. Insert any images of hand drawn sketches into the document (be careful of large image sizes).

Reference all sources you used for the problem identification, analysis and solution. Use Harvard referencing style for your referencing.

Assessment Due Date
Week 10 Friday (21 May 2021) 11:45 pm AEST

Return Date to Students

Weighting
20%

Assessment Criteria

Component	Out of
Problem description – clear, precise, comprehensive	2
Research of existing applications	2
Strengths and weaknesses of existing solutions	2
Quality of proposed improved solution	2
Points of difference	2
Identification of target market	2
Justification for the marketing strategy	2
Ethical concerns	2
Referencing	2
Writing quality	2
Deductions:	2
TOTAL	20

Referencing Style

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

Submission
Online

Learning Outcomes Assessed

- Describe and be able to develop critical parts of a native mobile system programming interface
- Critically analyse a research issue in mobile computing.

Graduate Attributes

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

3 Assignment 2

Assessment Type
Practical Assessment

Task Description
You are assigned the task of creating a tabbed iOS mobile application using Xcode, and Swift programming language. More details will be available on the Moodle site. You should also consult the weekly lecture/tutorials on the Moodle website for help and more information on completing

the assignment.

Assessment Due Date
Week 12 Friday (4 June 2021) 11:45 pm AEST

Return Date to Students

Weighting
30%

Assessment Criteria

Assignment Component	Criteria	Marks	Total
Classes and functions	·Proper implementation of UIViewController class.·Proper implementation and use of IBOutlet.·Proper implementation IBAction function·Proper coding with Swift	**4**	
Project Execution	·Tab functionalities·Proper functioning of Segment controllers·Double click on movies and add to favourites list·Click on movies and show their details·Add new items	**10**	
UI design	·Items on each view are in the correct positions w.r.t. each other·Navigation buttons are in a line and of equal width.·List of items showing all items with similar alignments.	**6**	
JSON file and fetching data	·Correct implementation and data import from JSON file.·Proper JSON file format.	**3**	
Add new item	·The add new item functionality and a proper design of related UI.	**2**	
Documentation	·Hardware / Software requirements·Application commentary·Testing Strategy·Recorded video file to demonstrate the application's functionality.	**3**	
General	·Use appropriate naming conventions·Adequate commenting·Correct grammar·Citation of references and copyright use.	**2**	
Penalties	5% = 1.5 marks per day for late submission		
	Total	**30**	

Referencing Style

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

Submission
Online

Learning Outcomes Assessed

- Design and implement native mobile applications
- Use an integrated IDE to build, debug and test native mobile applications
- Determine the business impact of a given mobile solution and critically assess the implementation of an app and its likely marketability and profitability

Graduate Attributes

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

4 Portfolio

Assessment Type
Portfolio

Task Description
You are to submit a set of portfolio items for weeks 2 to 11 inclusive. The weekly portfolios will describe your understanding of the topic for the week, with relevant references and resources

providing evidence of your understanding.

You are to conduct a search of the internet on the topic for the week. You should review a minimum of 4 items of the items you find and link them to your portfolio. You are **not** to upload files from the internet, as you do not own copyright, and if you do, this will be plagiarism. **You are to use links to your items only**. You may include items from YouTube, clips from lectures and/or tutorials, and your own work that you produce in the tutorials. Your portfolio should capture rich ideas, resources and innovative practice around mobile app development within the frame of the weekly topics.

The structure of the weekly portfolio entry is as follows:

· Summary of weekly learning topics, about ¼ page of A4.

· A list of at least 2 resources. Each resource should consist of a Harvard reference or link to online resources, about a ¼ page of A4.

· This should be followed by a brief discussion as to what the resource is, why you chose the item, and why you thought the item chosen was appropriate, about ½ a page of A4.

Assessment Due Date
Week 12 Friday (4 June 2021) 11:45 pm AEST

Return Date to Students

Weighting
20%

Assessment Criteria

Criteria	Marks/week
Summary of weekly topic	0.5
Resource descriptions	1
Number and justification/quality of resource	0.5

Referencing Style

- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Describe and be able to develop critical parts of a native mobile system programming interface
- Determine the business impact of a given mobile solution and critically assess the implementation of an app and its likely marketability and profitability

Graduate Attributes

- Knowledge
- Communication
- Self-management

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