COIT20270 *App Development for Mobile Platforms*
Term 3 - 2022

Profile information current as at 14/12/2025 03:42 pm

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 3 - 2022

- Brisbane
- Melbourne
- Online
- 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 Taken notes from online lecture

Feedback
Students requested a brief overview of Java programming language and discussing its syntax.

Recommendation
Provide a brief overview of object-oriented programming and Java at the start of term so students can refresh their knowledge.

Feedback from Taken notes from online lecture

Feedback
Need more clarity about the portfolio assessment.

Recommendation
Providing a video or a document on the unit website explaining how to create portfolios using Portfolium.

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

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

Michael Cowling Unit Coordinator
m.cowling@cqu.edu.au

Schedule

Week 1 - 07 Nov 2022

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

Week 2 - 14 Nov 2022

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 - 21 Nov 2022

Module/Topic	Chapter	Events and Submissions/Topic

Layouts and Widgets	Android Programming: Big Nerd Ranch Guide 3rd ed, Chapter 8 & 9	

Week 4 - 28 Nov 2022

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

Vacation Week - 05 Dec 2022

Module/Topic	Chapter	Events and Submissions/Topic

Week 5 - 12 Dec 2022

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

Week 6 - 19 Dec 2022

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	**Android Assignment** Due: Week 6 Friday (23 Dec 2022) 11:45 pm AEST

Vacation Week - 26 Dec 2022

Module/Topic	Chapter	Events and Submissions/Topic

Week 7 - 02 Jan 2023

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 - 09 Jan 2023

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 - 16 Jan 2023

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

Week 10 - 23 Jan 2023

Module/Topic	Chapter	Events and Submissions/Topic
Passing Data from one View Controller to Another	iOS 13 & Swift 5 Programming: Chapter 5	**App Development Report** Due: Week 10 Friday (27 Jan 2023) 11:45 pm AEST

Week 11 - 30 Jan 2023

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

Week 12 - 06 Feb 2023

Module/Topic	Chapter	Events and Submissions/Topic
Cross platform Mobile Application Development		**iOS Assignment** Due: Week 12 Friday (10 Feb 2023) 11:45 pm AEST

Exam Week - 13 Feb 2023

Module/Topic	Chapter	Events and Submissions/Topic

Portfolio Due: Exam Week Monday (13 Feb 2023) 11:45 pm AEST

Term Specific Information

Unit Coordinator: A/Prof. Michael Cowling
Ph: 07 3295 1196, E-mail: m.cowling@cqu.edu.au

Assessment Tasks

1 Android Assignment

Assessment Type
Practical Assessment

Task Description
You are assigned the task of creating a mobile application to input and display data and store the data 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 Dec 2022) 11:45 pm AEST

Return Date to Students

Returned approximately two weeks after submission.

Weighting
30%

Assessment Criteria
The marking criteria will include:

- Activities and Layouts
- Fragments
- Database
- Menus
- Email
- Documentation

More details will be available on the Moodle site.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
You are required to submit a zipped directory containing all the code and resources as well as your document via the unit's Moodle page

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 App Development 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 a new and novel mobile application for a small business. Having researched and identified a problem/need 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 (27 Jan 2023) 11:45 pm AEST

Return Date to Students

Returned approximately two weeks after submission.

Weighting
20%

Assessment Criteria
The marking criteria will include:

- Problem description
- Research of existing applications
- Strengths and weaknesses of existing solutions
- Quality of proposed improved solution

- Points of difference
- Identification of target market
- Justification for the marketing strategy
- Ethical concerns

More details will be available on the Moodle site.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
You are required to submit a a single word document via the unit's Moodle page

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 iOS Assignment

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 (10 Feb 2023) 11:45 pm AEST

Return Date to Students

Returned approximately two weeks after submission.

Weighting
30%

Assessment Criteria
The marking criteria will include:

- Classes and Functions
- Project Execution
- UI Design
- Fetching Data
- Documentation

More details will be available on the Moodle site.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
You are required to submit a zipped directory containing all the code and resources as well as your document via the unit's Moodle page

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
Exam Week Monday (13 Feb 2023) 11:45 pm AEST

Return Date to Students

Returned after grade certification date.

Weighting
20%

Assessment Criteria
The weekly marking criteria will include:

- Summary of weekly topic
- Resource descriptions
- Number and justification/quality of resources

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
You are to submit a portfolio entry each week for weeks 2 to 11 inclusive

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