



# COIT20270 App Development for Mobile Platforms

## Term 2 - 2018

Profile information current as at 18/08/2022 02:42 am

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 applications for mobile platforms. A native mobile programming language 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 2 - 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 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. **Practical Assessment**

Weighting: 30%

#### 3. **Portfolio**

Weighting: 20%

#### 4. **Written Assessment**

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 Student evaluation

##### Feedback

Assignment feedback could have been delivered in a more timely fashion.

##### Recommendation

Coordinator to ensure all marks and work returned within two weeks of submission by all unit lecturers.

## 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.

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:

- 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



### 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%	•		•	•	

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
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

#### **Beginning Android Programming with Android Studio**

Edition: 1st edn (2016)

Authors: J.F. DiMarzio

John Wiley & Sons, Inc.

Indianapolis, IN, USA

ISBN: 978-1-118-70559-9

Binding: Paperback

[View textbooks at the CQUniversity Bookshop](#)

### IT Resources

#### You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Android Studio (with Marshmallow API 23) + 1 working AVD (virtual phone)

## Referencing Style

All submissions for this unit must use the referencing style: [Harvard \(author-date\)](#)

For further information, see the Assessment Tasks.

## Teaching Contacts

**Ron Balsys** Unit Coordinator

[r.balsys@cqu.edu.au](mailto:r.balsys@cqu.edu.au)

## Schedule

### Week 1 - 09 Jul 2018

Module/Topic	Chapter	Events and Submissions/Topic
Introducing the Mobile Web and Android Application Development.	DiMarzio, chapter 1 and 2.	

### Week 2 - 16 Jul 2018

Module/Topic	Chapter	Events and Submissions/Topic
Android Activities, Fragments and Intents.	DiMarzio, chapter 3.	

### Week 3 - 23 Jul 2018

Module/Topic	Chapter	Events and Submissions/Topic
The Android User Interface.	DiMarzio, chapter 4.	

### Week 4 - 30 Jul 2018

Module/Topic	Chapter	Events and Submissions/Topic
User Interfaces with Views.	DiMarzio, chapter 5.	

### Week 5 - 06 Aug 2018

Module/Topic	Chapter	Events and Submissions/Topic
Displaying Pictures and Menus. Data persistence.	DiMarzio, chapter 6 and 7.	

### Vacation Week - 13 Aug 2018

Module/Topic	Chapter	Events and Submissions/Topic

### Week 6 - 20 Aug 2018

Module/Topic	Chapter	Events and Submissions/Topic
Content Providers.	DiMarzio, chapter 8.	Assignment 1 due <b>Practical Assessment 1</b> Due: Week 6 Friday (24 Aug 2018) 11:50 pm AEST

### Week 7 - 27 Aug 2018

Module/Topic	Chapter	Events and Submissions/Topic
SMS and email Messaging. Location-based Services.	DiMarzio, chapter 9 and 10.	

### Week 8 - 03 Sep 2018

Module/Topic	Chapter	Events and Submissions/Topic
Networking.	DiMarzio, chapter 11.	

### Week 9 - 10 Sep 2018

Module/Topic	Chapter	Events and Submissions/Topic
Developing Android Services. Mobile App Testing.	DiMarzio, chapter 12. <b>Reading 1:</b> <a href="#">Mobile Testing - Quick Guide</a>	

### Week 10 - 17 Sep 2018

Module/Topic	Chapter	Events and Submissions/Topic
The App store and selling Apps.	<b>Reading 2:</b> <a href="#">Rodgers, Chapter 14, 2012.</a>	Assignment 2 due <b>Practical Assessment 2</b> Due: Week 10 Friday (21 Sept 2018) 11:50 pm AEST

### Week 11 - 24 Sep 2018

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to the scientific philosophy of research.	<b>Reading 3:</b> <a href="#">Stephan et al., 2012.</a>	

### Week 12 - 01 Oct 2018

Module/Topic	Chapter	Events and Submissions/Topic
Revision.		Portfolio due <b>Portfolio</b> Due: Week 12 Friday (5 Oct 2018) 11:50 pm AEST

### Review/Exam Week - 08 Oct 2018

Module/Topic	Chapter	Events and Submissions/Topic
		Written assessment due <b>Written Assessment</b> Due: Review/Exam Week Friday (12 Oct 2018) 11:50 pm AEST

### Exam Week - 15 Oct 2018

Module/Topic	Chapter	Events and Submissions/Topic

# Assessment Tasks

## 1 Practical Assessment 1

### Assessment Type

Practical Assessment

### Task Description

You are assigned the task of creating a data logger to capture shed location data in a mobile application that stores the data in a local database. The app is used to record results for a number of treatments for a product produced in a number of sheds. For each treatment the temperature (°C), humidity (%), ammonia content (in ppm) as well as the time of record are kept as a data entry. These values are incorporated into a **shedLog** class. An entry consists of **shedLog** data.

On app start a number of buttons are presented that link to five sheds. A corresponding shed page is presented for data entry that also has two buttons. When the **Save Log Entry** button is pressed these entries are saved locally in an application SQLiteDatabase. When the **Show Log Entries** button is pressed a related page (fragment) is shown that list all the date/time, temperature, humidity and ammonia entries for that treatment. We refer to the app as **CPWSLogs**.

More details of required pages are given below. Consult the weekly lecture/tutorials on the Moodle website for help and more information on completing the assignment. The tutorials contain step-by-step procedures for working through the assignment as well as some tips and extra help and clarification of the specification. Read all the lecture/tutorials on the Moodle website on a week-by-week basis.

The specification of this app will be further refined in Assignment 2.

### Assessment Due Date

Week 6 Friday (24 Aug 2018) 11:50 pm AEST

### Return Date to Students

Week 8 Monday (3 Sept 2018)

### Weighting

30%

### Assessment Criteria

Assignment Component	Criteria	Marks
MainActivity file	- The onBackPressed() method display the Save dialog - Pressing "OK" in the onBackPressed() method saves the SQLite database and exits - The log ArrayList values are initialised from the SQLite database entries on startup (2 marks)	4
Fragment files	- The time/date is added as required - The home, next and previous buttons work as required (2 marks) - The shed log entries are saved using Add ITEM button (2 marks) - Errors are caught and appropriate messages displayed - The shed logs class exists and is correct - The spinner works as required - Show logs button shows all entries for the shed and returns to the correct page (2 marks)	10
res/layout/xml and other files	- Items on fragments are in the correct positions w.r.t. each other - EditText items have the correct hints - Labels are all as given in the specifications - Navigation buttons are in a line and of equal width - The spinner has the values stored in the strings.xml file	5
Menu options	- The profile page checks that the passwords match, no items are null and returns to the block fragment (2 marks) - The Save entries menu saves the values to the database (2 marks) - The Send entries menu option clears the SQLite database and the shed logs ArrayList	5
SQLite database	- The DBAdapter class is present and works correctly	2
Hardware/Software & commentary	Hardware / Software requirements	1
	Application commentary	2
General	- Feedback given as required - Use appropriate naming conventions - Adequate commenting - Correct grammar - Citation of references, copyright use	1

**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 Practical Assessment 2

**Assessment Type**

Practical Assessment

**Task Description**

You are assigned the task of creating a data logger to capture shed location data in a mobile application that stores the data in a local database. The app is used to record results for a number of treatments for a product produced in a number of sheds. For each treatment the temperature (°C), humidity (%), ammonia content (in ppm) as well as the time **and location** of record are kept as a data entry. Upon reflection it was decided to add the latitude and longitude of the sheds to the data recorded. This allowed for specific sheds be located by their geographical location. These values are incorporated into a **shedLog** class. An entry consists of **shedLog** data.

On app start buttons link to the five sheds. A shed page is presented for data entry containing two buttons. When the **Save Log Entry** button is pressed these entries are saved locally in an application SQLiteDatabase. When the **Show Log Entries** button is pressed a related page (fragment) is shown that listed all the date/time, **location**, temperature, humidity and ammonia entries made for that treatment. We refer to the app as **CPWSLogs**.

More details of required pages are given below. Consult the weekly lecture/tutorials on the Moodle website for help and more information on completing the assignment. The tutorials contain step-by-step procedures for working through the assignment as well as some tips and extra help and clarification of the specification. Read all the lecture/tutorials on the Moodle website on a week-by-week basis.

**Assessment Due Date**

Week 10 Friday (21 Sept 2018) 11:50 pm AEST

**Return Date to Students**

Week 12 Friday (5 Oct 2018)

**Weighting**

30%

**Assessment Criteria**

Assignment Component	Criteria	Marks
<b>App development</b>	- TrackGPS class implemented correctly - Inventory_fragment uses TrackGPS to obtain and display the latitude and longitude - Inventory logger data copied to email - Message sent asynchronously using asynchronous task	15
<b>Testing Strategy</b>	- Discuss the selection of mobile models and Android versions for your testing process - Discussion of whether testing is required on actual devices and what part emulators/simulators play your testing plan - Documentation of test plan	3
<b>Sending App data</b>	- Discussion of using SMS messaging and advantages/disadvantages of SMS vs. eMail	1



<b>Financial Case &amp; Commentary</b>	- Discussion of the economic/financial case for the proposed app - Identification of potential costs - Estimation of technical development costs in hours - Discussion of how you would promote and market your app - Discussion of ethical issues	10
<b>General</b>	- Feedback given as required - Use appropriate naming conventions - Adequate commenting - Correct grammar - Citation of references, copyright use	1
<b>Penalties</b>		
	<b>Total</b>	<b>30</b>

#### 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

## 3 Portfolio

#### Assessment Type

Portfolio

#### Task Description

You are to submit a weekly portfolio submission, using Mahara, for weeks 2 to 11 inclusive. To access Mahara, click the "CQU Portfolio" link in the Network Services block on the left-hand side of the Moodle site. 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 the items you find and select a minimum of 5 items 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 UTube, 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.

You are to write a brief discussion for each week as to why you chose the items you did, and why you thought the items chosen are appropriate. Harvard referencing format and citations are to be used to substantiate your discussion.

#### Assessment Due Date

Week 12 Friday (5 Oct 2018) 11:50 pm AEST

#### Return Date to Students

Review/Exam Week Friday (12 Oct 2018)

#### Weighting

20%

#### Assessment Criteria

Criteria	Marks/week
Summary of weekly topic	1
Resource descriptions	0.5
Number and justification/quality of resources	0.5
Penalties	
<b>Total</b>	<b>2</b>

## 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

# 4 Written Assessment

## Assessment Type

Written Assessment

## Task Description

You are to write a scholarly essay that critically evaluates findings from at least two journal publications in one of the following research areas;

- The impact of location awareness on mobile applications
- Mobile application security
- Social implications of mobile applications
- The impact of cloud computing on mobile applications

You are not to write an essay on one of these topics. You are to critically reflect on the papers and then explain whether the papers did an adequate job of explaining what the purpose of the work was, collected sufficient evidence, and reached the right conclusions based on the evidence given in the work.

## Assessment Due Date

Review/Exam Week Friday (12 Oct 2018) 11:50 pm AEST

## Return Date to Students

Exam Week Friday (19 Oct 2018)

## Weighting

20%

## Assessment Criteria

This assignment will be assessed against the following criteria:

Description	Mark
Presentation - Structure, grammar, spelling, referencing	2
Introductory arguments - Well defined introduction to what critique is about	3
Critique body - For the 2 journal papers: Research questions identified. Methodology described. Analysis of conclusion discussed. Reflections on paper given. Synthesis of works into a critique of research area.	10
Conclusion - Summary well presented. Logical conclusions derived Interpretation of scholarly works correct. Argument presented within length guideline.	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
- Critically analyse a research issue in mobile computing.

## Graduate Attributes

- Knowledge
- Communication

- Cognitive, technical and creative skills
- Research
- 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