



COIT20270 App Development for Mobile Platforms

Term 2 - 2017

Profile information current as at 18/08/2022 02:13 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 - 2017

- 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. **Portfolio**

Weighting: 20%

2. **Practical Assessment**

Weighting: 30%

3. **Practical Assessment**

Weighting: 30%

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 Unit evaluation

Feedback

Students gave positive feedback on all items of the unit.

Recommendation

Continue the high standard in next offering.

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 4 Application Development

(2012)

Authors: Lee , Wei-Meng

John Wiley and Sons

Indianapolis , IN , USA

Binding: Hardcover

[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 (updated to 2017 for Marshmallow API 23) + 1 working AVD (marshmallow)

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

Schedule

Week 1 - 10 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
Introducing the Mobile Web and Android Application Development.	Lee, chapter 1 pp. 1-33.	

Week 2 - 17 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
Android Activities, Fragments and Intents.	Lee, chapter 2 pp. 35-103.	

Week 3 - 24 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
The Android User Interface.	Lee, chapter 3 pp. 105-156.	

Week 4 - 31 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
User Interfaces with Views.	Lee, chapter 4 pp. 159-214.	

Week 5 - 07 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic
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Displaying Pictures and Menus. Data persistence. Lee, chapter 5 pp. 219-249.
Lee, chapter 6 pp. 251-289.

Vacation Week - 14 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic
Week 6 - 21 Aug 2017		
Module/Topic	Chapter	Events and Submissions/Topic
Content Providers.	Lee, chapter 7 pp. 293-319.	Practical Assessment 1 Due: Week 6 Friday (25 Aug 2017) 11:00 pm AEST

Week 7 - 28 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic
SMS and email Messaging. Location-based Services.	Lee, chapter 8 pp. 321-347. Lee, chapter 9 pp. 351-390.	

Week 8 - 04 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic
Networking.	Lee, chapter 10 pp. 393-426.	

Week 9 - 11 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic
Developing Android Services. Mobile App Testing.	Lee, chapter 11 pp. 429-460. Reading 1: Mobile Testing - Quick Guide	

Week 10 - 18 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic
The App store and selling Apps.	Lee, chapter 12 pp. 463-482. Reading 2: Rodgers, Chapter 14, 2012.	Practical Assessment 2 Due: Week 10 Friday (22 Sept 2017) 11:00 pm AEST

Week 11 - 25 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to the scientific philosophy of research.	Reading 3: Stephan et al., 2012.	

Week 12 - 02 Oct 2017

Module/Topic	Chapter	Events and Submissions/Topic
Revision.		Portfolio Due: Week 12 Friday (6 Oct 2017) 11:00 pm AEST

Review/Exam Week - 09 Oct 2017

Module/Topic	Chapter	Events and Submissions/Topic
		Written Assessment Due: Review/Exam Week Friday (13 Oct 2017) 11:00 pm AEST

Exam Week - 16 Oct 2017

Module/Topic	Chapter	Events and Submissions/Topic
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Assessment Tasks

1 Portfolio

Assessment Type
Portfolio

Task Description

You are to submit a weekly portfolio submission using Mahara as per the instructions on the unit Moodle site. This weekly portfolio will describe your understanding of the topic for the week, with relevant references and resources providing evidence of your understanding.

Assessment Due Date

Week 12 Friday (6 Oct 2017) 11:00 pm AEST

Return Date to Students

Exam Week Friday (20 Oct 2017)

Approximately one week after the completion of portfolio

Weighting

20%

Assessment Criteria

Each portfolio submission (10) will be assessed against the following criteria for 2 marks:

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

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

2 Practical Assessment 1

Assessment Type

Practical Assessment

Task Description

You are assigned the task of creating a data logger to capture package location data in a mobile application that stores the data in a local database. The app has fields to record data for each of five cities where the app is employed. If a city is selected, a page (fragment) is shown to record data values for that city. An entry consists of **city** data. When the **Save Log Entry** button is pressed this data is 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 and data entries made for that city. We will refer to our app as *CityLogs*.

More details of these pages will be given in the Moodle Website for this course. You should also 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. Make sure you read the lecture/tutorials on the Moodle website.

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

Assessment Due Date

Week 6 Friday (25 Aug 2017) 11:00 pm AEST

Return Date to Students

Week 8 Friday (8 Sept 2017)

Weighting

30%

Assessment Criteria

MainActivity file	- The onBackPressed() method displays 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 (2 marks) - The city time/date buttons work as required - The spinner works as required - The city 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 city type and returns to the correct page (3 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 - Navigation buttons are in a line and of equal width - Labels are all as given in the specifications - The city class exists and is correct - The spinner has the values stored in the strings.xml file	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 city ArrayLists	4
SQLite database	- The DBAdapter class is present and works correctly	2
	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

3 Practical Assessment 2

Assessment Type

Practical Assessment

Task Description

This assignment builds on practical assessment 1. Data captured for each city also is to include location information. The information contained in the app database is to be incorporated into an email message and sent to the user when the send option is used. Consideration is also to be documented on app testing, ethical issues and how you might develop a financial case and market the app.

More details will be given in the Moodle unit website. You should also consult the weekly lecture/tutorials on the Moodle website for help and more information on completing the assignment. The tutorials contain step-by-step procedure for working through the assignment as well as some tips and extra help. Make sure you read the lecture/tutorials on the Moodle website.

Assessment Due Date

Week 10 Friday (22 Sept 2017) 11:00 pm AEST

Return Date to Students

Week 12 Friday (6 Oct 2017)

Weighting

30%

Assessment Criteria

App development	- TrackGPS class implemented correctly - Package_fragment uses TrackGPS to obtain and display the latitude and longitude - City logger data copied to email - Message sent asynchronously using thread - ProgressDialog displayed and email received	15
Testing Strategy	- 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
Sending App data	- Discussion of using SMS messaging and advantages/disadvantages of SMS vs. eMail	1
Financial Case & Commentary	- 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
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
- 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 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
- The impact of the cloud on mobile applications
- Mobile application security
- Social implications of 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, whether sufficient evidence was collected and whether the conclusions can be justified based on the evidence.

Assessment Due Date

Review/Exam Week Friday (13 Oct 2017) 11:00 pm AEST

Return Date to Students

Results of this assignment will be available to students after certification date

Weighting

20%

Assessment Criteria

Presentation - 2. Structure, grammar, spelling, referencing

Poor structure, grammar, use of referencing and spelling

Some problem

No problems

0 -> 1.0

1.0 -> 1.5

1.5-> 2

Introductory arguments - 3. Well defined introduction to what essay is about

Poorly introduced and defined

At least two papers adequately covered

Excellent introduction

0 -> 0.75

0.75 -> 2.5

2.5 -> 3

Essay body - 10. For 2 journal papers: - Research questions identified - Methodology described - Analysis of conclusion discussed - Reflections on paper Synthesis of works into a critique of research area

Poor summary, analysis, arguments and identification of issues, evaluation

Some sections done poorly

All sections done well

0 -> 5

5 -> 7.5

7.5 -> 10

Conclusion - 5. Summary well presented Logical conclusions derived Interpretation of scholarly works correct Argument presented within length guideline

Poor summary, directions, evaluations, interpretations and conclusion

Adequate

Excellent

0 -> 2.5

2.5 -> 4

4 -> 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