



COIT20269 *Mobile Web Apps*

Term 1 - 2021

Profile information current as at 14/12/2025 04:08 pm

All details in this unit profile for COIT20269 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 shows you how to design and implement dynamic mobile web apps that allow complex user interaction and build on knowledge of responsive web design. You will examine the viability of web apps versus native apps, with particular attention being paid to cross platform considerations using tools such as Apache Cordova, implementing web middleware using server-side tools such as Node.js and integrating these with cloud databases to store mobile data. The business drivers for mobile portals will also be discussed, as will the social impact of mobile technology. 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 Anti-Req: COIT20231 Mobile Computing

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: 20%

2. **Practical Assessment**

Weighting: 30%

3. **Project (applied)**

Weighting: 50%

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 Tutor and students' informal feedback

Feedback

Some of the tutorial examples/solutions did not work due to the new version of the software (Apache Cordova).

Recommendation

Update tutorial documentation and solutions to work with new versions of software, as well as provide guidance to students on dealing with version changes themselves.

Feedback from Student evaluations, teaching team reflections

Feedback

The rapid development of new mobile web app technologies makes it hard to keep the unit content up to date for different platforms.

Recommendation

Include cross-platform development approaches (e.g. Google Flutter) as well as other new technologies (e.g. micro-services, API gateways) in the unit. This will impact IT resources.

Unit Learning Outcomes

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

1. Design, create and implement a mobile web app
2. Design, create and implement a hybrid mobile app, a web service and then use these to store mobile data to a cloud database
3. Analyse and evaluate design alternatives for the app
4. Use an integrated development environment (IDE) build, debug and test mobile systems to develop a working app
5. Assess the current and future business impact of mobile web apps
6. Critically evaluate key research areas in mobile web apps.

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 workplace skills as defined by SFIA. The SFIA code is included:

Systems Design (DESN),

Systems Integration (SINT),

Data Analysis (DTAN),

Database/Repository Design (DBDS),

Testing (TEST),

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
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Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes					
	1	2	3	4	5	6
1 - Practical Assessment - 20%				•		
2 - Practical Assessment - 30%	•	•		•	•	
3 - Project (applied) - 50%		•	•		•	•

Alignment of Graduate Attributes to Learning Outcomes

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

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes							
	1	2	3	4	5	6	7	8
1 - Practical Assessment - 20%	○		○		○			
2 - Practical Assessment - 30%	○		○		○			
3 - Project (applied) - 50%	○	○			○			

Textbooks and Resources

Textbooks

COIT20269

Prescribed

Beginning Mobile Application Development in the Cloud

Edition: 1st (2012)

Authors: R. Rodger

John Wiley & Sons, Inc.

Indianapolis , IN , USA

ISBN: 978-1-118-03469-9

Binding: Paperback

Additional Textbook Information

If you prefer to study from a paper text, there are a couple available at the CQUni Bookshop here: <http://bookshop.cqu.edu.au> (search on the Unit code)

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Zoom (both microphone and webcam capability)

Referencing Style

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

Teaching Contacts

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

Schedule

Week 1 - 08 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Industry Introduction : Prospects : Terminology : JavaScript Overview	Lecturer created materials	

Week 2 - 15 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Webserver Concepts : UI Design Choices : ES6	Lecturer created materials	

Week 3 - 22 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
User Interface : Basic	Lecturer created materials	

Week 4 - 29 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
User Interface : Intermediate	Lecturer created materials	

Week 5 - 05 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
API Design	Lecturer created materials	

Vacation Week - 12 Apr 2021

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

Week 6 - 19 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
API Construction	Lecturer created materials	Practical Assignment 1 - Portfolio Web App Due: Week 6 Friday (23 Apr 2021) 11:45 pm AEST

Week 7 - 26 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Full Stack Implementation : Basic	Lecturer created materials	

Week 8 - 03 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Full Stack Implementation : Intermediate	Lecturer created materials	

Week 9 - 10 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Full Stack Implementation : Advanced	Lecturer created materials	

Week 10 - 17 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Production Development/Deployment (Part I)	Lecturer created materials	Practical Assignment 2 - Full Stack Hybrid App Due: Week 10 Friday (21 May 2021) 11:45 pm AEST

Week 11 - 24 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Production Development/Deployment (Part II)	Lecturer created materials	

Week 12 - 31 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Project Support		

Review/Exam Week - 07 Jun 2021

Module/Topic	Chapter	Events and Submissions/Topic
		Mobile Apps Project Due: Review/Exam Week Friday (11 June 2021) 11:45 pm AEST

Exam Week - 14 Jun 2021

Module/Topic	Chapter	Events and Submissions/Topic
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Term Specific Information

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

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

Assessment Tasks

1 Practical Assignment 1 - Portfolio Web App

Assessment Type

Practical Assessment

Task Description

This is an **individual** assessment. The objectives of this assignment are to develop, test and maintain a mobile internet application using an integrated suite of mobile software development tools. More specifically you will work on the client-side of the application using jQuery, jQuery Mobile, JavaScript, HTML5, and CSS.

You are required to complete various tasks including: “swipe” menu, input form with validation – data stored locally, display the form data , display data from an external third-party API and a student creative choice.

Further detail about the assessment task will be provided on the Moodle unit website and in the the assessment specification document.

Assessment Due Date

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

You must submit your assignment electronically by the above due date and time.

Return Date to Students

Week 8 Friday (7 May 2021)

The marks and feedback will be returned 2 weeks after the submisison due date.

Weighting

20%

Assessment Criteria

The marking criteria for this assessment are as follows.

Client App

jQuery Mobile SPA: 3 marks

- Correct Framework · Correct support files - local implementation · Header and Footer correct – logo – title and and “sandwich” menu icon function as required

Swipe Menu: 5 marks

- HTML - Appropriate Design - items are correctly formatted · Home image and 5 choices (2 marks)
- JavaScript - Events correctly handled · Uses jQuery Mobile Plugins · Button actions as specified (3 marks)

Input Form: 3 marks

- Uses jQuery Mobile Validation Plugin · Validation Rules as per specification · Stores data correctly in local array and localStorage · Stored data is restored and available for display when the App starts fresh

Display Form Data: 1 mark

- Display stored data - accessible via jQuery Mobile UI structure

Display Data from External API: 3 marks.

- Fetch correctly implemented · Display stored data – accessible via jQuery Mobile UI structure

Student Choice: 2 marks

- Creative choice · Creativity · Complexity · Function

Commentary

Instructions and testing: 1 mark

Application commentary: 1 mark

General

Use appropriate naming conventions · Adequate commenting · Correct grammar · Appropriate title page · Citation of references, copyright use : 1 mark

Referencing Style

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

Submission

Online

Submission Instructions

You are required to submit your assignment electronically via the Moodle unit website. The deliverable is a compressed file containing all your assessment work (code, folders, images and your Word document) as one tar, rar or zip file.

Please note: You should use your student number as the name for your gzip, rar or zip file when uploading to Moodle.

Learning Outcomes Assessed

- Use an integrated development environment (IDE) build, debug and test mobile systems to develop a working app

Graduate Attributes

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

2 Practical Assignment 2 - Full Stack Hybrid App

Assessment Type

Practical Assessment

Task Description

This is an **individual** assessment. The overall objective of this assignment is to develop, test and maintain a mobile internet application using an integrated suite of mobile software development tools. More specifically the tasks that need to be accomplished are:

1. Develop, test and maintain the **client-side** with jQuery, jQuery Mobile, JavaScript, HTML5, and CSS.
2. Develop, test and maintain an Express **Web Server** and **API** using JavaScript and node with various node packages. Data is stored locally on the mobile device and in the cloud (MongoDB). The API facilitates access to a MongoDB Atlas cloud service for online storage and retrieval using node express middleware.
3. Deploy the application as a Hybrid App to mobile devices (i.e., Android smartphone) using the Cordova Platform. Cordova provides access to native hardware, platforms, and project structure allowing deployment as a hybrid App.

Further detail about the assessment task will be provided on the Moodle unit website and in the assessment specification document.

Assessment Due Date

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

You must submit your assignment electronically by the above due date and time.

Return Date to Students

Week 12 Friday (4 June 2021)

The marks and feedback will be returned 2 weeks after the submission due date.

Weighting

30%

Assessment Criteria

The marking criteria for this assessment are as follows.

Client App

jQuery Mobile SPA: 2 marks

- Correct Framework · Correct support files - local implementation

General Functionality: 3 marks

- HTML - UI · Appropriate design - items are appropriately formatted · Navigation as required (1 mark)
- JavaScript - Functionality · Events correctly handled · Uses jQuery Mobile Plugins · Button Actions function to support specification requirements (2 marks)

Cordova Framework: 3 marks

- Correctly implemented · Application runs in Android Studio / CLI · Deploys to both emulator and smart device

Bar Code Reader: 4 marks

- Functions as required · QR Codes supplied · Data Structures correct · Stores in local memory and localStorage

Save to Cloud: 2 marks

- Functions correctly · Appropriate messages to user

Display Cloud Data: 2 marks

- Functions correctly · Appropriate messages to user

Server

Node/Express web server: 7 marks

- Web Server setup correctly - includes middleware and routes (3 marks)
- Connects with online database (1 mark)
- Appropriate/functioning API (3 marks)

Commentary

Instructions and testing: 1 mark

Application commentary: 1 mark

Research: 4 marks

General

Use appropriate naming conventions · Adequate commenting · Correct grammar · Appropriate title page · Citation of references, copyright use: 1 mark

Referencing Style

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

Submission

Online

Submission Instructions

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Please note: You should use your student number as the name for your gzip, rar or zip file when uploading to Moodle.

Learning Outcomes Assessed

- Design, create and implement a mobile web app
- Design, create and implement a hybrid mobile app, a web service and then use these to store mobile data to a cloud database
- Use an integrated development environment (IDE) build, debug and test mobile systems to develop a working app
- Assess the current and future business impact of mobile web apps

Graduate Attributes

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

3 Mobile Apps Project

Assessment Type

Project (applied)

Task Description

This is a group assessment. You should work in a group of three members.

In this assessment, you are going to design, specify, implement, and test a Hybrid App. You are to come up with your own idea for the App. Keep it simple as you have only a day a week during the term to prototype and develop this idea.

The concepts covered in this unit are somewhat universal and should generally support various project concepts. You must develop and document enough to justify the time allocated to the project.

Business and Research aspects of the project should be included. You will also cover deploying the API server to an online service.

Further detail about the assessment task will be provided on the Moodle unit website and in the the assessment specification document.

Assessment Due Date

Review/Exam Week Friday (11 June 2021) 11:45 pm AEST

You must submit your assignment electronically by the above due date and time.

Return Date to Students

The marks and feedback will be returned on the date of certification of grades.

Weighting

50%

Assessment Criteria

The marking criteria for this assessment are as follows.

App Design and Specification

Proposal: 2 marks

- Well defined description of what the app is intended to be and do

Motivation: 1 mark

- Well-reasoned choice of target audience and likely interest

Summary of tasks: 1 mark

- A reasonable choice of tasks to be completed in producing the App is given (Gantt Chart)

Data: 2 marks

- The major data/data structures are documented

User interface prototypes: 2 marks

- Prototypes for the main user interfaces/pages in the app presented

Originality/Creativity: 2 marks

App Development

Client: 9 marks

- Correct Framework
- Correct support files - local implementation
- HTML - UI · Design - items are appropriately formatted · Navigation as required

- JavaScript - Functionality · Events correctly handled · Uses jQuery Mobile Plugins · Button Actions function to support specification requirements

Server: 9 marks

- Node/Express Web Server setup correctly - Includes Middleware and Routes
- Connects with online database
- Appropriate/functioning API

Cordova Framework: 2 marks

- Correctly implemented
- Application runs in Android Studio/CLI
- Deploys to both emulator and smart device

Deploy API Server: 2 marks

- Deploy API Server to online Service

Results: 3 marks

- Achievement compared to others
- Discussion of functionality and outcomes

App Testing, Business Case, Marketing Plan and Research

App Testing: 2 marks

- App testing plan, documentation of tests

Business Plan: 4 marks

- Estimating costs, estimating revenue, break-even sales

Marketing: 4 marks

- Demographic identification and description of tactics

Research: 5 marks

- Documentation of products and issues

Referencing Style

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

Submission

Online

Submission Instructions

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Please note: You should use your student number as the name for your gzip, rar or zip file when uploading to Moodle.

Learning Outcomes Assessed

- Design, create and implement a hybrid mobile app, a web service and then use these to store mobile data to a cloud database
- Analyse and evaluate design alternatives for the app
- Assess the current and future business impact of mobile web apps
- Critically evaluate key research areas in mobile web apps.

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