



# COIT20269 *Mobile Web Apps*

## Term 1 - 2023

Profile information current as at 14/12/2025 03:37 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 - 2023

- 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 Teaching team's reflection

##### Feedback

The code examples provided in the lecture slides and tutorial materials helped students build their skills.

##### Recommendation

Continue providing intuitive coding examples in the lecture slides and tutorial materials.

#### Feedback from Unit Coordinator's reflection

##### Feedback

The unit lacks coverage on secure coding practices.

##### Recommendation

Add a weekly topic on secure coding practices and assess this knowledge in one or more assessment tasks.

## 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



### 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

**There are no required textbooks.**

### IT Resources

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

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Android Studio (latest version)
- Zoom (both microphone and webcam capability)
- Visual Studio Code (latest version)
- Notepad++ (latest version)
- Node from <https://nodejs.org/en/> (latest version)
- Gradle (latest version)
- Git CLI from <https://cli.github.com/>
- Apache Cordova (latest version, URL: <https://cordova.apache.org/>)
- Heroku CLI (URL: <https://devcenter.heroku.com/articles/heroku-cli#install-the-heroku-cli>)

## Referencing Style

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

## Teaching Contacts

**Umair Ullah Tariq** Unit Coordinator  
[u.tariq@cqu.edu.au](mailto:u.tariq@cqu.edu.au)

## Schedule

### Week 1 - 06 Mar 2023

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

### Week 2 - 13 Mar 2023

Module/Topic	Chapter	Events and Submissions/Topic
JavaScript: Basics. JSON	Lecturer created materials	

### Week 3 - 20 Mar 2023

Module/Topic	Chapter	Events and Submissions/Topic
JavaScript: Arrays. Objects. jQuery. jQueryMobile	Lecturer created materials	

### Week 4 - 27 Mar 2023

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

### Week 5 - 03 Apr 2023

Module/Topic	Chapter	Events and Submissions/Topic
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User Interface : Intermediate

Lecturer created materials

#### Vacation Week - 10 Apr 2023

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

#### Week 6 - 17 Apr 2023

Module/Topic	Chapter	Events and Submissions/Topic
API Design	Lecturer created materials	<b>Assignment 1 - Mobile Web App</b> Due: Week 6 Tuesday (18 Apr 2023) 11:45 pm AEST

#### Week 7 - 24 Apr 2023

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

#### Week 8 - 01 May 2023

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

#### Week 9 - 08 May 2023

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

#### Week 10 - 15 May 2023

Module/Topic	Chapter	Events and Submissions/Topic
Full Stack Implementation: Advanced	Lecturer created materials	<b>Assignment 2 - Full Stack Hybrid App</b> Due: Week 10 Tuesday (16 May 2023) 11:45 pm AEST

#### Week 11 - 22 May 2023

Module/Topic	Chapter	Events and Submissions/Topic
Production Development/Deployment	Lecturer created materials	<b>Assignment 3 - Mobile Apps Project Part A</b> Due: Week 11 Tuesday (23 May 2023) 11:45 pm AEST

#### Week 12 - 29 May 2023

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

#### Review/Exam Week - 05 Jun 2023

Module/Topic	Chapter	Events and Submissions/Topic
		<b>Assignment 3 - Mobile Apps Project Part B</b> Due: Review/Exam Week Tuesday (06 June 2023) 11:45 pm AEST

#### Exam Week - 12 Jun 2023

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

Contact information for Dr Umair Ullah Tariq: Email: u.tariq@cqu.edu.au; Office: Level 2 Room 2.08, 400 Kent Street, Sydney NSW 2000; P +61 2 9324 5096.

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 email to discuss a time for a meeting.

## Assessment Tasks

### 1 Assignment 1 - Mobile Web App

#### Assessment Type

Practical Assessment

#### Task Description

This is an **individual** assignment. The objective of this assignment is to develop, test and maintain a mobile web 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:

- set up a JQueryMobile SPA (Single Page Application) with LOCAL supporting files,
- design and integrate a “swipe” menu system,
- design and integrate an input form with validation – data stored locally,
- display the form data,
- display data from an external third-party API, and
- a student's creative choice.

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

#### Assessment Due Date

Week 6 Tuesday (18 Apr 2023) 11:45 pm AEST

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

#### Return Date to Students

Week 8 Tuesday (2 May 2023)

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

#### Weighting

20%

#### Assessment Criteria

The marking criteria for this assignment will be provided on the Moodle unit website and in the assignment specification document.

#### 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 Assignment 2 - Full Stack Hybrid App

#### Assessment Type

Practical Assessment

### Task Description

This is an **individual** assignment. The main outcome of this assignment is to create a Hybrid App running on a Smart Device wherein products are scanned by an employee and available for review by both the employee and his manager.

More specifically the tasks that need to be accomplished are:

1. **Client** - Develop, test, and maintain a mobile internet application using an integrated suite of mobile software development tools. More specifically on the client-side jQuery, jQuery Mobile, JavaScript, HTML5, and CSS.
2. **Hybrid App** - Deploy the client application as a Hybrid App to smart devices (e.g., Android smartphones) using the Cordova platform.
3. **Server** - 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.

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

### Assessment Due Date

Week 10 Tuesday (16 May 2023) 11:45 pm AEST

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

### Return Date to Students

Week 12 Tuesday (30 May 2023)

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

### Weighting

30%

### Assessment Criteria

The marking criteria for this assignment will be provided on the Moodle unit website and in the assignment specification document.

### 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

- 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 Assignment 3 - Mobile Apps Project

### Assessment Type

Project (applied)

### Task Description

This is a **group** assignment. You should work in a group of **three (3)** members. The overall objective of this assignment is to design, specify, implement, and test a Hybrid App.

More specifically the tasks that need to be accomplished are:

### Part A: Project Proposal (15 marks)

You will generate a semi-original idea for a mobile application. The proposal will contain:

- A brief description of what the app is about and what it does
- A brief discussion of the motivation for producing the app, i.e., who will use the app and why they will use the app (target audience)
- A list of the high-level user requirements
- Software architecture clearly depicting all components
- Wireframes of all user interfaces
- A brief outline of the testing plan
- A summary of the major tasks and who is doing what to be completed in developing the app

### Part B: Application and Report (35 marks)

- **Client** - Develop, test, and maintain a mobile internet application using an integrated suite of mobile software development tools. More specifically on the client-side jQuery, jQuery Mobile, JavaScript, HTML5, and CSS.
- **Hybrid App** - Deploy the client application as a Hybrid App to smart devices (e.g., Android smartphone) using the Cordova platform.
- **Server** - 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.
- **Server Deployment** - Deploy the API server using an online service (e.g., Heroku).
- **Report** - Run instructions, problem resolution, testing, and vulnerability analysis.

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

**Please note the following artifacts of this assessment task must be uploaded to Portfolium (<https://portfolium.com/activity>) as part of your course-wide portfolio:**

- Source code
- User manual
- Test results
- Vulnerability analysis report

### Assessment Due Date

You must submit Part A of the assignment by Week 11 Tuesday (23 May 2023) 11:45 pm AEST. Part B of the assignment must be submitted by Review/Exam Week Tuesday (06 June 2023) 11:45 pm AEST.

### 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 assignment will be provided on the Moodle unit website and in the assignment specification document.

### Referencing Style

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

### Submission

Online

### Submission Instructions

For Part A, you are required to submit a Word file to Moodle. For Part B, the deliverable is a compressed file containing all your code, supporting files and your report 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

- 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