



# COIT11240 Dashboard Design and Visualisation

## Term 1 - 2024

Profile information current as at 08/05/2024 09:21 pm

All details in this unit profile for COIT11240 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

While organisations can collect a large amount of data about their operations, a continual challenge they face is extracting useful information from that data. Dashboards summarise key information using visualisations and interactive reports. Dashboards are therefore an important tool in supporting decision making in an organisation. In this unit, you will learn how to design dashboards. You will develop skills to condense and encapsulate the characteristics of data, making it easier to analyse trends to drive effective decision-making. You will also learn creative ways to present the insights and findings of data using data visualisation tools and techniques.

#### Details

Career Level: *Undergraduate*

Unit Level: *Level 1*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

#### Pre-requisites or Co-requisites

There are no requisites for this unit.

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 - 2024

- 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 Undergraduate 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. **Online Quiz(zes)**

Weighting: 20%

#### 2. **Practical Assessment**

Weighting: 30%

#### 3. **Project (applied)**

Weighting: 30%

#### 4. **Presentation**

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 Self and Student Evaluation

##### Feedback

The lecture material needs more detail on Data Analysis Expressions.

##### Recommendation

The lecture materials for week five should be revised and augmented with additional resources.

## Unit Learning Outcomes

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

1. Explain the fundamentals of dashboard design and data visualisation
2. Compare different dashboard design and data visualisation tools
3. Explain the application of dashboard design and visualisation in summarising key information
4. Identify the best practices in implementing dashboard design
5. Design and implement a dashboard for a business case.

The Australian Computer Society (ACS) recognises the Skills Framework for the Information Age (SFIA). SFIA is adopted by organisations, governments and individuals in many countries and provides a widely used and consistent definition of ICT skills. SFIA is increasingly being used when developing job descriptions and role profiles. ACS members can use the tool MySFIA (<https://www.acs.org.au/professionalrecognition/mysfia-b2c.html>) to build a skills profile.

This unit contributes to the following workplace skills as defined by SFIA 7 (<https://www.sfia-online.org/en>). The SFIA code is included:

Data Visualisation VISL

Analytics INAN

Business Analysis BUAN

## 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 - Online Quiz(zes) - 20%		•		•	
2 - Practical Assessment - 30%	•	•	•		
3 - Project (applied) - 30%	•		•	•	•
4 - Presentation - 20%					•

### Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
1 - Communication	•	•		•	•
2 - Problem Solving	•	•		•	•
3 - Critical Thinking	•		•		
4 - Information Literacy	•	•		•	•
5 - Team Work					
6 - Information Technology Competence	•	•	•	•	•
7 - Cross Cultural Competence					
8 - Ethical practice					
9 - Social Innovation				•	
10 - 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	9	10
1 - Online Quiz(zes) - 20%	•	•	•			•				
2 - Practical Assessment - 30%	•	•	•	•		•			•	
3 - Project (applied) - 30%	•	•	•	•		•			•	
4 - Presentation - 20%	•	•		•		•				

## Textbooks and Resources

### Textbooks

COIT11240

#### Prescribed

##### **Microsoft Power BI Dashboards Step by Step**

Edition: 1 (2018)

Authors: Errin O'Connor

Microsoft Pres

ISBN: 9781509308033

Binding: eBook

COIT11240

#### Supplementary

##### **Learning Microsoft Power BI By Jeremy Arnold**

(2022)

Authors: Jeremy Arnold

Binding: eBook

COIT11240

#### Supplementary

##### **The Big Book of Dashboards: Visualizing Your Data Using Real-World Business Scenarios**

Edition: 1 (2017)

Authors: Steve Wexler; Jeffery Shaffer; Andy Cotgreav

Wiley

ISBN: 1119282713

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)
- Zoom capacity (webcam and microphone) will be required for online students
- Microsoft Power BI

## Referencing Style

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

For further information, see the Assessment Tasks.

## Teaching Contacts

**Ahsan Morshed** Unit Coordinator

[a.morshed@cqu.edu.au](mailto:a.morshed@cqu.edu.au)

## Schedule

### Week 1 - 04 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
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Data Visualisation: Introduction to Power BI, architecture and administration

Book 1: Microsoft Power BI Dashboards by Errin O'Connor  
Chapters: 1 and 2

#### Week 2 - 11 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Dashboard use: Visuals in Power BI and report development	Book 1: Microsoft Power BI Dashboards by Errin O'Connor Chapters: 3 and 4	

#### Week 3 - 18 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Designs of Executives Sales Dashboards and Report generation using Power BI	Book 1: Microsoft Power BI Dashboards by Errin O'Connor Book 2: The Big Book of Dashboards: Visualizing Your Data Using Real-World Business Scenarios by Steve Wexler; Jeffery Shaffer; Andy Cotgreave Chapter: 5 Book1 Chapter: 5 Book 2	

#### Week 4 - 25 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Reports using Microsoft EXCEL	Books 1: Microsoft Power BI Dashboards by Errin O'Connor Chapter: 6	

#### Week 5 - 01 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
Data Analysis Expression (DAX)	Power BI documentation from <a href="https://docs.microsoft.com/en-us/power-bi/">https://docs.microsoft.com/en-us/power-bi/</a>	

#### Vacation Week - 08 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
Revise all previous lecture slides and tutorial work	Revise all previous lecture slides and tutorial work	

#### Week 6 - 15 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
Power BI reports from Access database	Power BI documentation from <a href="https://docs.microsoft.com/en-us/power-bi/">https://docs.microsoft.com/en-us/power-bi/</a>	Practical Assessment due First Quiz due <b>Practical Assessment</b> Due: Week 6 Monday (15 Apr 2024) 11:45 pm AEST

#### Week 7 - 22 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
Visualization and gateways	Power BI documentation from <a href="https://docs.microsoft.com/en-us/power-bi/">https://docs.microsoft.com/en-us/power-bi/</a>	

#### Week 8 - 29 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
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Power BI Pro (service) and  
Dashboard creation

Power BI documentation from  
<https://docs.microsoft.com/en-us/power-bi/>

#### Week 9 - 06 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
Power BI reports from MySQL	Power BI documentation from <a href="https://docs.microsoft.com/en-us/power-bi/">https://docs.microsoft.com/en-us/power-bi/</a>	

#### Week 10 - 13 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
Case Study : Power Plant Operations and Monitoring	Book 2: The Big Book of Dashboards: Visualizing Your Data Using Real-World Business Scenarios by Steve Wexler; Jeffery Shaffer; Andy Cotgreave Chapter: 9	

#### Week 11 - 20 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
Case Study 1: Web Analytics Dashboard Case Study 2: Hospitality Dashboard for Hotel Management	Book 2: The Big Book of Dashboards: Visualizing Your Data Using Real-World Business Scenarios by Steve Wexler; Jeffery Shaffer; Andy Cotgreave Chapter:13 Chapter:15	Business Report due Second Quiz Due  <b>Business Report</b> Due: Week 11 Monday (20 May 2024) 11:45 pm AEST

#### Week 12 - 27 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
Review Week: The next steps	No slides for the Review week.	Presentation Due Submit your unit evaluation  <b>Presentation</b> Due: Week 12 Monday (27 May 2024) 11:45 pm AEST

#### Review/Exam Week - 03 Jun 2024

Module/Topic	Chapter	Events and Submissions/Topic
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#### Exam Week - 10 Jun 2024

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

### Unit Coordinator

Dr. Ahsan Morshed

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CQUniversity Melbourne, 120 Spencer Street, Melbourne Vic 3000

## Assessment Tasks

### 1 Online Quizzes

#### **Assessment Type**

Online Quiz(zes)

**Task Description**

This assessment is designed to reinforce the weekly taught content. This is an individual assessment that should be submitted during tutorial day. Campus students will participate in their tutorial day with a tutor, and distance students will participate in the online tutorial day with the coordinator. You will complete two quizzes in Week 6, and Week 11 based on your lecture slides, recorded lectures, and respective book chapters. You will get five questions in each quiz. Each quiz lasts 30 minutes, and only one attempt is allowed. This assessment contributes to 20% of the total marks.

**Number of Quizzes**

2

**Frequency of Quizzes**

Other

**Assessment Due Date**

In Week 6 and Week 11 tutorial day.

**Return Date to Students**

One week after the due date.

**Weighting**

20%

**Assessment Criteria**

Assessment 1 will be marked based on the following criteria.  
Each quiz is worth 10 marks

Total: 20 marks

**Referencing Style**

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

**Submission**

Online

**Submission Instructions**

Each quiz must be submitted during the tutorial day.

**Learning Outcomes Assessed**

- Compare different dashboard design and data visualisation tools
- Identify the best practices in implementing dashboard design

**Graduate Attributes**

- Communication
- Problem Solving
- Critical Thinking
- Information Technology Competence

## 2 Practical Assessment

**Assessment Type**

Practical Assessment

**Task Description**

This assessment relates to Learning Outcomes 1, 2 and 3. This is an individual assessment. This assessment should be submitted in week 6. You will submit work on Power BI on data manipulation exercises. This will provide you with an opportunity to gain insights from data by providing interactive visualizations. Each week you will be presented with a data-related challenge, data visualization capabilities and you will use Power BI tool to gain insights from data and challenge. This assessment will help build your knowledge of data formats, retrieval and analysis techniques. Details relating to the challenge will be provided to you through the Moodle unit website in Week 2. This assessment contributes to 30% of the total marks.

**Assessment Due Date**

Week 6 Monday (15 Apr 2024) 11:45 pm AEST  
Online via Moodle

**Return Date to Students**

Week 8 Friday (3 May 2024)



Within two weeks of submission via online Moodle.

### **Weighting**

30%

### **Assessment Criteria**

The marking criteria are based on:

- Knowledge & understanding of the topic of the given problem.
- Analysis skills and technical literacy as demonstrated by the appropriate analysis techniques.
- Discussion of appropriateness for inclusion in view of analysis.
- Reference/citation included.

The marking will be distributed as follows :

Submitted screenshot of all questions worth 5 marks

The analysis presented on the generated output worth 20 marks

Well-written report worth 5 marks

Total: 30 marks

### **Referencing Style**

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

### **Submission**

Online

### **Submission Instructions**

All files must be submitted via the Moodle unit website for marking by the due date.

### **Learning Outcomes Assessed**

- Explain the fundamentals of dashboard design and data visualisation
- Compare different dashboard design and data visualisation tools
- Explain the application of dashboard design and visualisation in summarising key information

### **Graduate Attributes**

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence
- Social Innovation

## **3 Business Report**

### **Assessment Type**

Project (applied)

### **Task Description**

For clarity consider: report based on the given case study provided to you in week 6. This is an individual assessment and contributes to Learning Outcomes 1, 3, 4 and 5. This report will follow a standard business report format and the report template will be provided via Moodle. You will be investigating how you might advise an organization, whose details are given in the case study on data processing, data analysis and to provide the organization with meaningful insights into their data. You will also be developing an analytical dashboard using Power BI for the organization and show your analysis on the developed dashboard. The assessment will be marked out of a total of 100 marks and form 30 % of the total marks for the unit.

### **Assessment Due Date**

Week 11 Monday (20 May 2024) 11:45 pm AEST

Online via Moodle

### **Return Date to Students**

Feedback and marks for this assessment will be released on the certification date as this unit does not have an exam.

**Weighting**

30%

**Assessment Criteria**

The marking criteria are based on :

- knowledge & understanding of the topic as depicted by collection in the view.
- Communication skills and information literacy as demonstrated by the discussion.
- Technical literacy as presented by the selection of items in the report.
- Discussion of appropriate for inclusion in view of the dashboard.
- References/citation included.

Assessment marks will be distributed as follows:

Report formatting (font, header and footer, table of contents, numbering, referencing) worth 5 marks

Professional communication (correct spelling, grammar, formal business language used) worth 5 marks

Executive summary worth 5 marks

Introduction worth 5 marks

Dashboard design and analysis worth 75 marks

Conclusion and recommendations worth 5 marks

Total: 100 marks

**Referencing Style**

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

**Submission**

Online

**Submission Instructions**

The assignment must be submitted via the Moodle unit website for marking by the due date.

**Learning Outcomes Assessed**

- Explain the fundamentals of dashboard design and data visualisation
- Explain the application of dashboard design and visualisation in summarising key information
- Identify the best practices in implementing dashboard design
- Design and implement a dashboard for a business case.

**Graduate Attributes**

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence
- Social Innovation

## 4 Presentation

**Assessment Type**

Presentation

**Task Description**

This assessment contributes to Learning Outcome 5. This is an individual presentation based on Assessment 3. All students are required to deliver the presentation. You are required to present the dashboard developed in Assessment 3 based on the given case study. The presentation will be held in Week 12 during tutorial time.

**Assessment Due Date**

Week 12 Monday (27 May 2024) 11:45 pm AEST

See the task descriptions

**Return Date to Students**

Feedback and marks for this assessment will be released on the certification date as this unit does not have an exam.

**Weighting**

20%

## Assessment Criteria

The assessment criteria include aspects such as:

- insightful analysis of the given case study in the given context.
- The audience has a clear understanding of the implications of findings for the given case.
- Your presentation has a strong and engaging introduction, an effective thesis; the body of the presentation flows from the thesis; your conclusion effectively wraps up the work; structure includes title slide, conclusion, or summary slides and a reference list.
- Meticulous presentation framing, e.g., ideas in point form; not in sentence form; slide numbers; footers; few words per slides; large font size; only relevant animation and images; consistent colour, fonts and layouts; contrast between text and background.
- Stage presence includes being well prepared, standing up straight, loud clear voice, good eye contact, does not speak too fast or too slow; appropriate use of cue cards; does not read; appropriate use of time.
- Mechanics, e.g., spelling, grammar and referencing.

The marks will be distributed as follows:

Stay on the topic worth 3 marks

Justify requirements of the topic worth 3 marks

Slide style worth 2 marks

Presentation style worth 6 marks

Valid information presented worth 6 marks

Total: 20 marks

## Referencing Style

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

## Submission

Online

## Submission Instructions

The presentation file must be submitted via the Moodle unit website by the due date.

## Learning Outcomes Assessed

- Design and implement a dashboard for a business case.

## Graduate Attributes

- Communication
- Problem Solving
- Information Literacy
- Information Technology Competence

## 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