



# COIS13013 *Business Intelligence*

## Term 1 - 2020

Profile information current as at 17/05/2022 02:33 pm

All details in this unit profile for COIS13013 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

The application of business intelligence and analytics have transformed the way in which organisations operate. Through the use of business intelligence and analytics tools, organisations are able to better understand how their businesses are performing, make well-informed decisions that improve business performance and create new strategic opportunities for growth. This unit equips you with the knowledge of various business intelligence concepts, tools and analytical techniques that organisations use for improving their decision making and to achieve competitive advantage. You will learn about the role of various information systems (Management Support Systems, Decision Support Systems, Knowledge-Based Systems, Group Support Systems) and how they are integrated at the enterprise level to support decision making. In this unit, you will specifically learn about data mining, data visualisation, text and web analytics and use a data mining tool to classify and analyse data.

#### Details

Career Level: *Undergraduate*

Unit Level: *Level 3*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

#### Pre-requisites or Co-requisites

Pre-requisites: COIT11226 Systems Analysis and COIT11240 Dashboard Design and Visualisation OR COIT11226 Systems Analysis and HRMT11010 Organisational Behaviour.

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 - 2020

- 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. **Written Assessment**

Weighting: 40%

#### 2. **Written Assessment**

Weighting: 40%

#### 3. **Group Work**

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

Power BI is a useful tool for business analytics service, which provides interactive visualisations and business intelligence capabilities. More practicals on how to use Power BI can be provided for this unit.

##### Recommendation

Some related practicals of Power BI can be designed as tutorial activities to enhance students' understanding of business analytics.

#### Feedback from Staff feedback

##### Feedback

The presentation assessment task for online students should be redesigned with specific assessment methods, and for the on-campus students, it can be made as group-based.

##### Recommendation

Review and update the presentation assessment tasks to suit both on-campus and distance students.

## Unit Learning Outcomes

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

1. Apply the principles of decision theory to interpret the needs of decision makers
2. Analyse the needs of computerised support for managerial decision making and business performance reporting
3. Evaluate the roles, trends and impacts of various business intelligence and analytics tools in organisations
4. Analyse the technological architecture required for building business intelligence systems in organisations
5. Evaluate the importance of data analysis, data processing and visualisation
6. Apply business intelligence and analytics software tools to solve real world problems and interpret results.

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:

- Analytics (INAN)
- Business Analysis (BUAN)
- Data Analysis (DTAN)
- Data Visualisation (VISL)

## 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 - Written Assessment - 40%	•	•		•	•	
2 - Written Assessment - 40%	•	•	•			•
3 - Group Work - 20%			•	•	•	•

### Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes					
	1	2	3	4	5	6
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 - Written Assessment - 40%	•	•	•	•	•	•				
2 - Written Assessment - 40%	•	•	•	•	•	•		•		
3 - Group Work - 20%	•	•	•	•	•	•		•		

## Textbooks and Resources

### Textbooks

COIS13013

#### Prescribed

##### **Business Intelligence and Analytics: Systems for Decision Support, Global Edition**

Edition: 10th (2014)

Authors: Ramesh Sharda, Dursun Delen and Efraim Turban

Pearson

Upper Saddle River , New Jers , USA

ISBN: 9781292009209

Binding: Other

#### Additional Textbook Information

Copies can be purchased at the CQUni Bookshop here: <http://bookshop.cqu.edu.au> (search on the Unit code)

[View textbooks at the CQUniversity Bookshop](#)

### IT Resources

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

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- WEKA (Version: 3.8.1 – 64 Bit)
- Trueblue Visual DSS (Release 6789 Student Edition – 32 Bit)
- Microsoft Power BI Desktop (Version: 2.53.4954.621 – 64 Bit)
- Microsoft Power BI publisher for Excel (Version: 2.37.3272.33601 – 32 Bit for Microsoft office -32 Bit; 64 Bit for Microsoft office -64 Bit)
- Python (Version 3.8.1) <https://www.python.org/> (optional)
- Tableau Desktop (Version 2019.4.1) (optional)
- R (free, open-source data analysis software): <http://cran.r-project.org/> (optional)

## Referencing Style

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

For further information, see the Assessment Tasks.

## Teaching Contacts

**Yufeng Lin** Unit Coordinator

[y.lin@cqu.edu.au](mailto:y.lin@cqu.edu.au)

## Schedule

### Week 1 - 09 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
Overview of Business Analytics and Intelligence	Chapter 1	

### Week 2 - 16 Mar 2020

Module/Topic	Chapter	Events and Submissions/Topic
Foundations and Technologies for Decision Making	Chapter 2	

<b>Week 3 - 23 Mar 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Data Warehousing for Business Intelligence	Chapter 3	
<b>Week 4 - 30 Mar 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Business Reporting, Visual Analytics, and Performance Management	Chapter 4	
<b>Week 5 - 06 Apr 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Predictive Analytics with Data Mining	Chapter 5	
<b>Vacation Week - 13 Apr 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
<b>Week 6 - 20 Apr 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Integration and Analysis of Unstructured Data	Chapter 7 & 8	<b>Assignment 1: DECISION MAKING, VISUAL ANALYTICS AND CASE STUDY</b> Due: Week 6 Monday (20 Apr 2020) 11:45 pm AEST
<b>Week 7 - 27 Apr 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Modelling and Analysis: Methods and Simulation	Chapter 10	
<b>Week 8 - 04 May 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Data Visualisation and Dashboard Design	(Materials will be provided)	
<b>Week 9 - 11 May 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Automated Decision Systems and Expert Systems	Chapter 11	
<b>Week 10 - 18 May 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Business Analytics and Intelligent: Emerging Trends and Future Impacts	Chapter 14	<b>Assignment 2: Modeling, Data Mining and Dashboard Design</b> Due: Week 10 Friday (22 May 2020) 11:45 pm AEST
<b>Week 11 - 25 May 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Workshop 1: Business Analytics Case Study	(Materials will be provided)	
<b>Week 12 - 01 Jun 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>
Workshop 2: Business Intelligence Application Scenarios	(Materials will be provided)	
<b>Review/Exam Week - 08 Jun 2020</b>		
<b>Module/Topic</b>	<b>Chapter</b>	<b>Events and Submissions/Topic</b>

**Assignment 3: Groupwork ON BUSINESS INTELLIGENCE DEVELOPMENT AND IMPLEMENTATION** Due: Review/Exam Week Friday (12 June 2020) 11:45 pm AEST

**Exam Week - 15 Jun 2020**

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

Unit Coordinator: Dr Yufeng Lin  
Contact Number: 0747 265 329  
Email: y.lin@cqu.edu.au

## Assessment Tasks

### 1 Assignment 1: DECISION MAKING, VISUAL ANALYTICS AND CASE STUDY

#### Assessment Type

Written Assessment

#### Task Description

There are three parts in Assignment 1:

- The first part is related to decision making for business investment. You are required to use a Visual DSS tool to generate models and derive solutions for making decisions on business investment.
- The second part is related to data and information visualisation. You are required to generate data visualisation by using Power BI to conduct business analytics.
- The third part is related to business intelligence case study. You are required to write a report from a given BI application scenario.

More details will be provided on the Moodle website.

#### Assessment Due Date

Week 6 Monday (20 Apr 2020) 11:45 pm AEST

#### Return Date to Students

Week 8 Monday (4 May 2020)

Assessments will be returned through Moodle website. Late submissions with or without extension approvals will be returned after the above date.

#### Weighting

40%

#### Assessment Criteria

Your assessment will be marked according to the following criteria:

Appropriate use of Visual DSS for generating models and deriving business solutions	20 marks
Data visualisation and visual analytics	10 marks
Discussion on business intelligence projects' development and implementation	10 marks

#### Referencing Style

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

#### Submission

Online

#### Learning Outcomes Assessed

- Apply the principles of decision theory to interpret the needs of decision makers
- Analyse the needs of computerised support for managerial decision making and business performance reporting
- Analyse the technological architecture required for building business intelligence systems in organisations

- Evaluate the importance of data analysis, data processing and visualisation

### Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Team Work
- Information Technology Competence

## 2 Assignment 2: Modeling, Data Mining and Dashboard Design

### Assessment Type

Written Assessment

### Task Description

There are three parts in Assignment 2:

- The first part is related to data processing, modelling and analysis, and automated decision system. Students are required to do some problem-solving calculations, data preparation, modelling and analysis for building an automatic decision system.
- The second part is related to data mining. Students are required to use a specific data mining tool to generate a classification tree and provide a summary of the classification result.
- The third part is related to descriptive analytics information management tool (Dashboard) that visually tracks, analyse and display key performance indicators (KPI), metrics etc. to monitor the overall business performance. Students are required to design/discuss a business intelligence dashboard to facilitate decision making.

More details will be provided on the Moodle website.

### Assessment Due Date

Week 10 Friday (22 May 2020) 11:45 pm AEST

### Return Date to Students

Week 12 Friday (5 June 2020)

### Weighting

40%

### Assessment Criteria

Your second assignment will be marked according to the following criteria:

Data processing, model and analysis, automated decision system discussion	15 marks
Appropriate use of data mining tool for data analysis	15 marks
A case study on information visualisation and analysis	10 marks

### Referencing Style

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

### Submission

Online

### Learning Outcomes Assessed

- Apply the principles of decision theory to interpret the needs of decision makers
- Analyse the needs of computerised support for managerial decision making and business performance reporting
- Evaluate the roles, trends and impacts of various business intelligence and analytics tools in organisations
- Apply business intelligence and analytics software tools to solve real world problems and interpret results.

### Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Team Work
- Information Technology Competence
- Ethical practice



# 3 Assignment 3: Groupwork ON BUSINESS INTELLIGENCE DEVELOPMENT AND IMPLEMENTATION

## Assessment Type

Group Work

## Task Description

In this group assessment (the group size is to be 3, although variations may need to be made by the tutor depending on the class size), you are required to write a report which describes the achievement of data analysis modelling on a specific business project with the application of business intelligence. The case study or scenario can be from any application area. The report is to demonstrate the application of business analytics and intelligence in a specific business intelligence application area and presentation will be required to show your understandings of BI or the specific technologies used to build BI applications.

## Assessment Due Date

Review/Exam Week Friday (12 June 2020) 11:45 pm AEST

## Return Date to Students

Assessments will be returned on the Certificate date (required for the unit without an exam)

## Weighting

20%

## Assessment Criteria

Your third assignment will be marked according to the following criteria:

Introduction of the chosen BI application scenario	3 marks
The business analytics framework	3 marks
How to apply artificial intelligence to the business analytics model	4 marks
Presentation slides	4 marks
Presentation (Recorded videos provided by online groups)	6 marks

## Referencing Style

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

## Submission

Online Group

## Submission Instructions

Just allowed only one copy of submission from each group

## Learning Outcomes Assessed

- Evaluate the roles, trends and impacts of various business intelligence and analytics tools in organisations
- Analyse the technological architecture required for building business intelligence systems in organisations
- Evaluate the importance of data analysis, data processing and visualisation
- Apply business intelligence and analytics software tools to solve real world problems and interpret results.

## Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Team Work
- Information Technology Competence
- Ethical practice

## 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