COIS13013 *Business Intelligence*
Term 1 - 2022

Profile information current as at 14/12/2025 12:40 pm

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: (COIT12203 Workflow Analysis & Management and COIT11240 Dashboard Design and Visualisation) OR (COIT12203 Workflow Analysis & Management 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 - 2022

- 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: 30%
2. **Written Assessment**
Weighting: 40%
3. **Group Work**
Weighting: 30%

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-reflection

Feedback
Lecture slides could be updated with recent case studies and BI tools.

Recommendation
Revise lecture slides to include updated content, recent case studies and BI tools.

Feedback from Unit evaluation and staff feedback

Feedback
Students enjoyed the workshops in weeks 11 and 12.

Recommendation
Continue to organise workshops with industry experts.

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

— N/A Level ◦ Introductory Level • Intermediate Level • Graduate Level ◦ Professional Level ◦ Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes					
	1	2	3	4	5	6
1 - Written Assessment - 30%	•	•		•	•	

Assessment Tasks	Learning Outcomes					
	1	2	3	4	5	6
2 - Written Assessment - 40%	•	•	•			•
3 - Group Work - 30%			•	•	•	•

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 - 30%	•	•	•	•	•	•				
2 - Written Assessment - 40%	•	•	•	•	•	•		•		
3 - Group Work - 30%	•	•	•	•	•	•		•		

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
COIS13013

Supplementary

Practical Business Intelligence
First Edition (2016)
Authors: Ahmed Sherif
Packt Publishing
Birmingham , United Kingdom
ISBN: 9781785885433
Binding: Paperback

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

Schedule

Week 1 - 07 Mar 2022

Module/Topic	Chapter	Events and Submissions/Topic

Overview of Business Analytics and Intelligence	Chapter 1 in the primary textbook	

Week 2 - 14 Mar 2022

Module/Topic	Chapter	Events and Submissions/Topic
Foundations and Technologies for Decision Making	Chapter 2 in the primary textbook	

Week 3 - 21 Mar 2022

Module/Topic	Chapter	Events and Submissions/Topic
Data Generation, Processing and Storage for Business Analytics	Chapter 3 in the primary textbook (Extra learning materials will be provided via Moodle unit website)	

Week 4 - 28 Mar 2022

Module/Topic	Chapter	Events and Submissions/Topic
Business Reporting, Visual Analytics, and Performance Management	Chapter 4 in the primary textbook	

Week 5 - 04 Apr 2022

Module/Topic	Chapter	Events and Submissions/Topic
Predictive Analytics with Data Mining	Chapter 5 in the primary textbook	

Mid-term break - 11 Apr 2022

Module/Topic	Chapter	Events and Submissions/Topic

Week 6 - 18 Apr 2022

Module/Topic	Chapter	Events and Submissions/Topic
Integration and Analysis of Unstructured Data	Chapter 7 & 8 in the primary textbook (Extra learning materials will be provided via Moodle unit website)	**Assignment 1: Decision Making, Visual Analytics and Case Study** Due: Week 6 Friday (22 Apr 2022) 11:45 pm AEST

Week 7 - 25 Apr 2022

Module/Topic	Chapter	Events and Submissions/Topic
Modelling and Analysis: Methods and Simulation	Chapter 10 in the primary textbook	

Week 8 - 02 May 2022

Module/Topic	Chapter	Events and Submissions/Topic
Visualisation and Dashboard Design	(Learning materials will be provided via Moodle unit website)	

Week 9 - 09 May 2022

Module/Topic	Chapter	Events and Submissions/Topic
Automated Decision Support Systems and Expert Systems	Chapter 11 in the primary textbook (Extra learning materials will be provided via Moodle unit website)	

Week 10 - 16 May 2022

Module/Topic	Chapter	Events and Submissions/Topic
Business Analytics and Intelligent: Emerging Trends and Future Impacts	Chapter 14 in the primary textbook	**Assignment 2: Modeling, Data Mining and Dashboard Design** Due: Week 10 Friday (20 May 2022) 11:45 pm AEST

Week 11 - 23 May 2022

Module/Topic	Chapter	Events and Submissions/Topic
Workshop 1: Business Analytics Case Study	Learning materials will be provided, and group discussions will be arranged.	

Week 12 - 30 May 2022

Module/Topic	Chapter	Events and Submissions/Topic
Workshop 2: Business Intelligence Application Scenarios	Presentations and group discussions will be arranged.	

Review/Exam Week - 06 Jun 2022

Module/Topic	Chapter	Events and Submissions/Topic
		Assignment 3: Groupwork on Business Intelligence Development and Implementation Due: Review/Exam Week Friday (10 June 2022) 11:45 pm AEST

Exam Week - 13 Jun 2022

Module/Topic	Chapter	Events and Submissions/Topic

Term Specific Information

For any queries, please contact the unit coordinator from Townsville campus: Dr Yufeng Lin (e-mail: 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 a business intelligence (BI) case study. You are required to write a short report from a given BI application scenario.
- The second 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 third part is related to data and information visualisation. You are required to generate data visualisation by using Power BI to conduct business analytics.

More details will be provided on the unit website.

Assessment Due Date
Week 6 Friday (22 Apr 2022) 11:45 pm AEST

Late submissions are subject to the university's late submission penalty policies.

Return Date to Students
Week 8 Friday (6 May 2022)

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

Weighting
30%

Assessment Criteria
Your assessment will be marked according to the following aspects:

- Discussion on your understanding of business intelligence and analytics.
- Appropriate use of Visual DSS for generating models and deriving business solutions
- Data visualisation and visual analytics

You will be assessed on your responses regarding accuracy, clarity, and suitability for the given contexts. See the unit website for more details.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
This assignment should be attempted and submitted individually.

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 support systems. Students are required to do some problem-solving calculations, data preparation, modelling and analysis for building an automatic decision support 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, analyses, and displays key performance indicators (KPI), metrics and so forth 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 unit website.

Assessment Due Date
Week 10 Friday (20 May 2022) 11:45 pm AEST

Late submissions are subject to the university's late submission penalty policies.

Return Date to Students
Week 12 Friday (3 June 2022)

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

Weighting
40%

Assessment Criteria
Your second assignment will be marked according to the following aspects:

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

You will be assessed on your responses regarding accuracy, clarity, and suitability for the given contexts. See the unit website for more details.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
This assignment should be attempted and submitted individually.

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 assignment (the group size is to be three, although variations may need to be made by the tutor depending on the class size), your group is required to draft 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 BI application area. The report will demonstrate a framework of business analytics and intelligence in a specific business intelligence application area. A presentation will be required to show your understanding of BI or the specific technologies used to build BI applications.

Assessment Due Date
Review/Exam Week Friday (10 June 2022) 11:45 pm AEST

Late submissions are subject to the university's late submission penalty policies.

Return Date to Students

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

Weighting
30%

Assessment Criteria
Your third assignment will be marked according to the following aspects:

- Introduction of the chosen BI application scenario
- The business analytics framework
- How to apply artificial intelligence to the business analytics model
- Presentation slides
- Presentation (a recorded video provided by each online group)

Your group will be assessed on the responses regarding teamwork, accuracy, clarity, and suitability for a chosen BI application. See the unit website for more details.

Referencing Style

- Harvard (author-date)

Submission
Online Group

Submission Instructions
This assignment should be attempted as a teamwork and only one of you are requested to submit the assignment for your 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