ACCT29085 *Financial Data Analytics*
Term 2 - 2023

Profile information current as at 10/05/2024 07:08 pm

General Information

Overview
As the economy moves towards more digital disruption, management are seeking innovative technologies for generating insights for decision making. The unit is designed to provide you with an understanding of how financial data of an organisation can be analysed for insights using data analytics. You are introduced to concepts, tools, software and methodologies of data science and how they are applied to the analysis of financial data. You will gain experience in analysing transaction data and financial ratios for segmentation, credit data for risk modelling, next best product offer, visualising data, and generating dashboards for performance reporting. This unit is suitable for students with minimal business, finance and information systems background.

Details
Career Level: *Postgraduate*
Unit Level: *Level 9*
Credit Points: *6*
Student Contribution Band: *10*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites
Pre-requisite: ACCT28002 Accounting for Management Decision Making Co-requisite: ACCT28003 Business Analytics Techniques. Students enrolling in this unit must be undertaking the CL84 Master of Business Administration (International).
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 2 - 2023

- Jakarta

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).

Residential Schools
This unit has a Optional Residential School for distance mode students and the details are:
Click here to see your Residential School Timetable.

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. **Online Quiz(zes)**
Weighting: 20%
2. **Practical Assessment**
Weighting: 20%
3. **Project (applied)**
Weighting: 30%
4. **Take Home Exam**
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 Students in class

Feedback

Students joined the MBA Data Science Major with the expectation that all of the topics are focused on Data science approach.

Recommendation

The topics should focus on data science approach where possible, and student expectations need to be managed where other topics are included.

Unit Learning Outcomes

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

1. Understand and distinguish alternative data analytics methods relevant to management decision making
2. Apply data analytics to provide information for financial analysis, credit risk modeling and other applications using Numpy, Pandas and Matplotlib in Python
3. Identify insights from financial data using machine learning approaches
4. Apply visualization to reveal underlying data relationships using Tableau to inform decision making.

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
1 - Online Quiz(zes) - 20%	•	•	•	•
2 - Practical Assessment - 20%		•		•
3 - Project (applied) - 30%			•	
4 - Take Home Exam - 30%	•	•	•	

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes			
	1	2	3	4
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				

Textbooks and Resources

Textbooks

ACCT29085

Prescribed

Corporate Finance
Edition: 12e (2021)
Authors: Ross Westerfield Jaffe
Mc Graw Hill
New York , US
Binding: eBook

IT Resources

You will need access to the following IT resources:

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

Referencing Style

All submissions for this unit must use the referencing style: American Psychological Association 7th Edition (APA 7th edition)
For further information, see the Assessment Tasks.

Teaching Contacts

Jerry Heikal Unit Coordinator
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Schedule

Week 1 : Introduction to Financial Data Analytics - 10 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to Financial Data Analytics 1. Big Data Introduction 2. What is Financial Data Analytics 3. Why Financial Data Analytics 4. Stages in Big Financial Data Analytics 5. What is Big Financial Data Analytics Domain 6. Big Financial Data Analytics Used Case 7. Introduction to Python Fundamental 8. Demonstration: Python Fundamental	1. Yves Hilpisch - Python for Finance_ Mastering Data-Driven Finance Book-O'Reilly (2018) Ch1 Ch2 2. Yuxing Yan - Python for Finance-Packt Publishing (2017) Ch1 Ch2 3. Joel Grus - Data Science from Scratch_ First Principles with Python-O'Reilly Media (2019) Ch 1 4. Python Fundamental : https://github.com/jheikal/Python-for-beginner	1. Quiz Pre-test 20 Questions (Please refer to Moodle) 2. Quiz Post test 20 Questions (Please refer to Moodle)

Week 2 Financial Data Analytics using Python Fundamental - 17 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Financial Data Analytics using Python Fundamental 1. Basic Numpy 2. Basic Pandas	1. VanderPlas, Jacob T - Python data science handbook_ essential tools for working with data-O'Reilly Media (2017) Ch 2 Numpy Ch 3 Pandas 2. Michael Heydt - Mastering pandas for Finance_ Master pandas, an open source Python Data Analysis Library, for financial data analysis-Packt Publishing (2015) Ch 1 Ch 2 3. Python Fundamental : https://github.com/jheikal/Python-for-beginner	1. Quiz Pre-test 20 Questions (Please refer to Moodle) 2. Quiz Post test 20 Questions (Please refer to Moodle)

Week 3 Financial Data Analytics using Multi Linear Regression Analysis - 24 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Financial Data Analytics using Multi Linear Regression FDA using Regression in Python can help finance and investment professionals as well as professionals in other businesses. Multi linear regression uses many independent variable to explain or predict the outcome of the dependent variable Y	1. VanderPlas, Jacob T - Python data science handbook_ essential tools for working with data-O'Reilly Media (2017) Ch 4 2. Puneet Mathur - Machine Learning Applications Using Python_ Cases Studies from Healthcare, Retail, and Finance-Apress (2019) Ch 3 3. Eryk Lewinson - Python for Finance Cookbook_ Over 50 recipes for applying modern Python libraries to quantitative finance to analyze data-Packt Publishing (2020) Ch 3 4. Joel Grus - Data Science from Scratch_ First Principles with Python-O'Reilly Media (2019) Ch 14, 15 5. Stephen Ross, Randolph Westerfield, Bradford D. Jordan - Fundamentals of Corporate Finance [Standard Edition]-McGraw-Hill _ Irwin (2009) Ch 13 CAPM 6. Python Data Science : https://github.com/jheikal/SIF-Data_Science/tree/Big-Data/MLR	1. Quiz Pre-test 20 Questions (Please refer to Moodle) 2. Quiz Post test 20 Questions (Please refer to Moodle)

Week 4 Financial Data Analytics using Binary Logistic Regression - 31 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Financial Data Analytics using Binary Logistic Regression FDA using Logistic regression is the machine learning technique used in finance to predict the relationship between predictors (our independent variables) and a predicted variable (the dependent variable) where the dependent variable is binary (Credit default or Non Default)	1. Usman Zafar Paracha - Lite Statistics with Basic Steps in Python Programming Language (2020), Page 238 2. Puneet Mathur - Machine Learning Applications Using Python_ Cases Studies from Healthcare, Retail, and Finance-Apress (2019) Ch 3 3. Eryk Lewinson - Python for Finance Cookbook_ Over 50 recipes for applying modern Python libraries to quantitative finance to analyze data-Packt Publishing (2020) Ch 4 4. (Chapman & Hall_CRC Data Mining and Knowledge Discovery Series) Jesus Rogel-Salazar - Advanced Data Science and Analytics With Python-Taylor & Francis L 5. Stephen Ross, Randolph Westerfield, Bradford D. Jordan - Fundamentals of Corporate Finance [Standard Edition]-McGraw-Hill _ Irwin (2009) Ch 7,8Joel Grus - Data Science from Scratch_ First Principles with Python-O'Reilly Media (2019) Ch 16 6. Python Data Science : https://github.com/jheikal/SIF-Data_Science/tree/Big-Data/LR	1. Quiz Pre-test 20 Questions (Please refer to Moodle) 2. Quiz Post test 20 Questions (Please refer to Moodle)

Week 5 Financial Data Analytics using Multinomial Logistic Regression - 07 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Financial Data Analytics using Multinomial Logistic Regression FDA using Multinomial logistic regression is used in Finance to predict categorical placement in or the probability of category membership on a dependent variable based on multiple independent variables. The independent variables can be either dichotomous (i.e., binary) or continuous (i.e., interval or ratio in scale).	1. Usman Zafar Paracha - Lite Statistics with Basic Steps in Python Programming Language (2020) Ch5 2. Puneet Mathur - Machine Learning Applications Using Python_ Cases Studies from Healthcare, Retail, and Finance-Apress (2019) Ch 4 3. Eryk Lewinson - Python for Finance Cookbook_ Over 50 recipes for applying modern Python libraries to quantitative finance to analyze data-Packt Publishing (2020) Ch5 4. Stephen Ross, Randolph Westerfield, Bradford D. Jordan - Fundamentals of Corporate Finance [Standard Edition]-McGraw-Hill _ Irwin (2009) Ch 9,10 5. (Chapman & Hall_CRC Data Mining and Knowledge Discovery Series) Jesus Rogel-Salazar - Advanced Data Science and Analytics With Python-Taylor & Francis L Ch 4 6. Python Data Science : https://github.com/jheikal/SIF-Data_Science/tree/Big-Data/Multinomial%20LR	1. Quiz Pre-test 20 Questions (Please refer to Moodle) 2. Quiz Post test 20 Questions (Please refer to Moodle)

Vacation Week - 14 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic

Week 6 Financial Data Analytics using Clustering - 21 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic

Financial Data Analytics using Clustering FDA using Clustering or cluster analysis in Finance is a machine learning technique, which groups the unlabelled dataset. It can be defined as "A way of grouping the data points (Financial Ratios) into different clusters, consisting of similar data points.	1. Puneet Mathur - Machine Learning Applications Using Python_ Cases Studies from Healthcare, Retail, and Finance-Apress (2019) Ch 9 2. Eryk Lewinson - Python for Finance Cookbook_ Over 50 recipes for applying modern Python libraries to quantitative finance to analyze data-Packt Publishing (2020) Ch 6 3. Stephen Ross, Randolph Westerfield, Bradford D. Jordan - Fundamentals of Corporate Finance [Standard Edition]-McGraw-Hill _ Irwin (2009) Ch 5.6 4. Joel Grus - Data Science from Scratch_ First Principles with Python-O'Reilly Media (2019) Ch 20 5. VanderPlas, Jacob T - Python data science handbook_ essential tools for working with data-O'Reilly Media (2017) Ch 4 6. Python Data Science : https://github.com/jheikal/Python-for-Data-Scientist/tree/master/Clustering	1. Quiz Pre-test 20 Questions (Please refer to Moodle) 2. Quiz Post test 20 Questions (Please refer to Moodle) 3. **Assessment 2 is due by this week on Wednesday, 23 August 2023 at 6 PM AEST.** **Practical Assessment 1 - Multi Linear Regression / Binary Logistic Regression / Multinomial Logistic Regression for Financial Industries** Due: Week 6 Wednesday (23 Aug 2023) 6:00 pm AEST

Week 7 Financial Data Analytics using RFM - 28 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Financial Data Analytics using RFM FDA using Recency, frequency, monetary value (RFM) is a Financial analysis tool used to identify a firm's best clients based on the nature of their spending habits.	1. Pyhton Data Science : https://github.com/jheikal/SIF-Data_Science/tree/Big-Data/RFM	1. Quiz Pre-test 20 Questions (Please refer to Moodle) 2. Quiz Post test 20 Questions (Please refer to Moodle)

Week 8 Financial Data Analytics using Market Basket Analytics - 04 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Financial Data Analytics using Market Basket Analytics FDA using Market basket analysis is a machine learning technique used by companies to increase sales and increase product holdings by better understanding customer purchasing patterns.	1. Eryk Lewinson - Python for Finance Cookbook_ Over 50 recipes for applying modern Python libraries to quantitative finance to analyze data-Packt Publishing (2020) Ch10 2. Stephen Ross, Randolph Westerfield, Bradford D. Jordan - Fundamentals of Corporate Finance [Standard Edition]-McGraw-Hill _ Irwin (2009) Ch 21,22 3. Jason Scratch - Python Crash Course_ Python Machine Learning. Find out how you can use it for faster coding. Discover algorithms and strategy analysis for finance 4. Python Data Science : https://github.com/jheikal/Python-for-Data-Scientist/tree/master/Market%20Basket	1. Quiz Pre-test 20 Questions (Please refer to Moodle) 2. Quiz Post test 20 Questions (Please refer to Moodle)

Week 9 Financial Data Analytics using Decision Tree - 11 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Financial Data Analytics using Decision Tree FDA using Decision Trees are a type of Supervised Machine Learning (that is you explain what the input is and what the corresponding output is in the training data) where the data is continuously split according to a certain parameter. The leaves are the decisions or the final outcomes.	1. Puneet Mathur - Machine Learning Applications Using Python_ Cases Studies from Healthcare, Retail, and Finance-Apress (2019) Ch 9 2. Joel Grus - Data Science from Scratch_ First Principles with Python-O'Reilly Media (2019) Ch 17 3. Stephen Ross, Randolph Westerfield, Bradford D. Jordan - Fundamentals of Corporate Finance [Standard Edition]-McGraw-Hill _ Irwin (2009) Ch 19,20 4. VanderPlas, Jacob T - Python data science handbook_ essential tools for working with data-O'Reilly Media (2017) Ch 4 5. Python Data Science : https://github.com/jheikal/SIF-Data_Science/tree/Big-Data/LDA	1. Quiz Pre-test 20 Questions (Please refer to Moodle) 2. Quiz Post test 20 Questions (Please refer to Moodle) 3. **Assessment 3 is due by this week on Wednesday, 13 September 2023 at 6 PM AEST.** **Practical Assessment 2 - Clustering / RFM / Market Basket Analytics Model for Financial Industries** Due: Week 9 Wednesday (13 Sept 2023) 6:00 pm AEST

Week 10 Financial Data Analytics using PCA - 18 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Financial Data Analytics using PCA FDA using Principal Component Analysis (PCA) in FInance is a machine procedure that uses an orthogonal transformation that converts a set of correlated variables to a set of uncorrelated variables. PCA is the most widely used tool in exploratory data analysis and in machine learning for predictive models.	1. Puneet Mathur - Machine Learning Applications Using Python_ Cases Studies from Healthcare, Retail, and Finance-Apress (2019) Ch 9 2. Eryk Lewinson - Python for Finance Cookbook_ Over 50 recipes for applying modern Python libraries to quantitative finance to analyze data-Packt Publishing (2020) Ch 8 3. Stephen Ross, Randolph Westerfield, Bradford D. Jordan - Fundamentals of Corporate Finance [Standard Edition]-McGraw-Hill _ Irwin (2009) Ch 17,18 4. VanderPlas, Jacob T - Python data science handbook_ essential tools for working with data-O'Reilly Media (2017) Ch 4 5. Python Data Science : https://github.com/jheikal/SIF-Data_Science/tree/Big-Data/PCA	1. Quiz Pre-test 20 Questions (Please refer to Moodle) 2. Quiz Post test 20 Questions (Please refer to Moodle)

Week 11 Financial Data Analytics using Neural Network - 25 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic

Financial Data Analytics using Neural Network FDA using neural network is a series of algorithms that endeavors to recognize underlying relationships in a set of data through a process that mimics the way the human brain operates. In this sense, neural networks refer to systems of neurons, either organic or artificial in nature	1. Puneet Mathur - Machine Learning Applications Using Python_ Cases Studies from Healthcare, Retail, and Finance-Apress (2019) Ch 14 2. Eryk Lewinson - Python for Finance Cookbook_ Over 50 recipes for applying modern Python libraries to quantitative finance to analyze data-Packt Publishing (2020) Ch 11 3. Joel Grus - Data Science from Scratch_ First Principles with Python-O'Reilly Media (2019) Ch 18 4. Stephen Ross, Randolph Westerfield, Bradford D. Jordan - Fundamentals of Corporate Finance [Standard Edition]-McGraw-Hill _ Irwin (2009) Ch 23 5. (Chapman & Hall_CRC Data Mining and Knowledge Discovery Series) Jesus Rogel-Salazar - Advanced Data Science and Analytics With Python-Taylor & Francis L Ch 4 6. Python Data Science : https://github.com/jheikal/SIF-Data_Science/tree/Big-Data/Neural-Network	1. Quiz Pre-test 20 Questions (Please refer to Moodle) 2. Quiz Post test 20 Questions (Please refer to Moodle)

Week 12 FInancial Data Analytics using Data Visualization (Tableau) - 02 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic
FInancial Data Analytics using Data Visualization	1. WILLIAM GRAY - DATA SCIENCE FROM SCRATCH_ From Data Visualization To Manipulation. It Is The Easy Way! All You Need For Business Using The Basic Principles Of Python And Beyond 2. Joel Grus - Data Science from Scratch_ First Principles with Python-O'Reilly Media (2019) Ch 3	1. Quiz Pre-test 20 Questions (Please refer to Moodle) 2. Quiz Post test 20 Questions (Please refer to Moodle)

Review/Exam Week - 09 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic
Reviewing all Chapters	1. Puneet Mathur - Machine Learning Applications Using Python_ Cases Studies from Healthcare, Retail, and Finance-Apress (2019) 2. Eryk Lewinson - Python for Finance Cookbook_ Over 50 recipes for applying modern Python libraries to quantitative finance to analyze data-Packt Publishing (2020) 3. Joel Grus - Data Science from Scratch_ First Principles with Python-O'Reilly Media (2019) 4. Stephen Ross, Randolph Westerfield, Bradford D. Jordan - Fundamentals of Corporate Finance [Standard Edition]-McGraw-Hill _ Irwin (2009) 5. Python Data Science : https://github.com/jheikal	**Take-Home Exam is due by this week on Wednesday, 18 October 2023 at 3 PM AEST.**

Exam Week : Assignment 3 - 16 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic
Exam Assignment 3.		1. Coding 2. Deck 3. Journal **Practical assessment 3 (Final Exam) - PRINCIPLE COMPONENT ANALYSIS / DECISION TREE / NEURAL NETWORK** Due: Exam Week Wednesday (18 Oct 2023) 3:00 pm AEST

Assessment Tasks

1 Online Quiz

Assessment Type
Online Quiz(zes)

Task Description
Online Quiz(zes) encompassing of Multiple Choices.

1. Pretest Score Quiz(zes) : Score will not be collected.
2. Post test Quiz(zes) : Score will be collected

Number of Quizzes
12

Frequency of Quizzes
Weekly

Assessment Due Date

Every week and This is an individual Quiz separated by Pretest and Post test using GCR

Return Date to Students

Directly after Quiz submission

Weighting
20%

Assessment Criteria
1 Question= 5 point
20 Questions = 100 point

Referencing Style

- American Psychological Association 7th Edition (APA 7th edition)

Submission
Online

Submission Instructions
Submit to GCR

Learning Outcomes Assessed

- Understand and distinguish alternative data analytics methods relevant to management decision making
- Apply data analytics to provide information for financial analysis, credit risk modeling and other applications using Numpy, Pandas and Matplotlib in Python
- Identify insights from financial data using machine learning approaches
- Apply visualization to reveal underlying data relationships using Tableau to inform decision making.

2 Practical Assessment 1 - Multi Linear Regression / Binary Logistic Regression / Multinomial Logistic Regression for Financial Industries

Assessment Type
Practical Assessment

Task Description

The students can choose the Assignment topic from:

1. CAPM
2. APT

The students can choose the Assignment methods from:

1. Multi Linear Regression using Python
2. Binary Logistic Regression using Python
3. Multinomial Logistic Regression using Python

This Assignment submission will be :

1. Coding in Kaggle/Github/Jupiter Notebook
2. Deck in PPT
3. Journal in Word

Assessment Due Date
Week 6 Wednesday (23 Aug 2023) 6:00 pm AEST
Submit your codes in Github/Kaggle, Deck and Journal to Moodle & GCR

Return Date to Students
Week 8 Wednesday (6 Sept 2023)
Feedback and Score will provided in Moodle

Weighting
20%

Assessment Criteria

1. The assessment Criteria
    1. Coding : 30% (Scale 1-5)
    2. Deck : 30% (Scale 1-5)
    3. Journal : 40% (Scale 1-5)

Referencing Style

- American Psychological Association 7th Edition (APA 7th edition)

Submission
Online

Submission Instructions
Submit your Codes in Github/Kaggle , Deck and Journal to Moodle and GCR

Learning Outcomes Assessed

- Apply data analytics to provide information for financial analysis, credit risk modeling and other applications using Numpy, Pandas and Matplotlib in Python
- Apply visualization to reveal underlying data relationships using Tableau to inform decision making.

3 Practical Assessment 2 - Clustering / RFM / Market Basket Analytics Model for Financial Industries

Assessment Type
Project (applied)

Task Description
The students can choose the Assignment topic from:

1. Clustering base on Financial Ratios
2. Market Basket base on Retail Transactions
3. RFM base on Bank Transactions

The students can choose the Assignment methods from:

1. Clustering using Python
2. RFM using Python
3. Market Basket using Python

This Assignment submission will be :

1. Coding in Kaggle/Github/Jupiter Notebook
2. Deck in PPT
3. Journal in Word

Please develop Clustering / RFM / Market Basket model for Banking Products to increase Sales and Product Holdings

Assessment Due Date
Week 9 Wednesday (13 Sept 2023) 6:00 pm AEST
Submit your Github, Deck and Journal to Moodle & GCR

Return Date to Students
Week 12 Wednesday (4 Oct 2023)
Feedback and Score will be provided in Moodle

Weighting
30%

Assessment Criteria
The assessment Criteria

1. Coding : 30% (Scale 1-5
2. Deck : 30% (Scale 1-5)
3. Journal : 40% (Scale 1-5)

Referencing Style

- American Psychological Association 7th Edition (APA 7th edition)

Submission
Online

Submission Instructions
Submit your Codes in Github/Kaggle , Deck and Journal to Moodle and GCR

Learning Outcomes Assessed

- Identify insights from financial data using machine learning approaches

4 Practical assessment 3 (Final Exam) - PRINCIPLE COMPONENT ANALYSIS / DECISION TREE / NEURAL NETWORK

Assessment Type
Take Home Exam

Task Description
The students can choose the Assignment topic from:

1. PCA and Clustering base on Financial Ratios
2. Decision Tree base on Credit Approval
3. Neural Network base on bank Transactions

The students can choose the Assignment methods from:

1. Principle Component Analysis and Clustering using Python
2. Decision Tree using Python
3. Neural Network using Python

This Assignment submission will be :

1. Coding in Kaggle/Github/Jupiter Notebook
2. Deck in PPT
3. Journal in Word

Assessment Due Date
Exam Week Wednesday (18 Oct 2023) 3:00 pm AEST
Please submit before the Due Date to Moodle & GCR

Return Date to Students

The student will received the feedback on the certification of grades

Weighting
30%

Assessment Criteria
The assessment Criteria

1. Coding : 30% (Scale 1-5)
2. Deck : 30% (Scale 1-5)
3. Journal : 40% (Scale 1-5)

Referencing Style

- American Psychological Association 7th Edition (APA 7th edition)

Submission
Online

Submission Instructions
Submit your Codes in Github/Kaggle , Deck and Journal to Moodle and GCR

Learning Outcomes Assessed

- Understand and distinguish alternative data analytics methods relevant to management decision making
- Apply data analytics to provide information for financial analysis, credit risk modeling and other applications using Numpy, Pandas and Matplotlib in Python
- Identify insights from financial data using machine learning approaches

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