MMBA8113

Big Data and AI for Decision Making: Leading Evidence-Based Solutions

Term 2, In person-scheduled-weekday, City 2025

Department of Actuarial Studies and Business Analytics

Contents

General Information

Unit convenor and teaching staff Nejhdeh Ghevondian nejhdeh.ghevondian@mq.edu.au
Credit points 10
Prerequisites MMBA8160 or (Admission to GradCertBusAdmin or GradDipBusAdmin)
Corequisites
Co-badged status
Unit description This unit integrates business and information technology with big data and AI to improve decision-making. This unit equips students with the knowledge and skills to lead and manage big data and data science projects within organisations. Dive into the strategic and operational applications of data science development practices, focusing on the transformative potential of big data and data science in reshaping business processes. Explore the impact of big data on companies' IT infrastructure, resource allocation for data science workstreams, and the technological underpinnings of the big data ecosystem. Tailored for MBA students and business managers, this unit facilitates managerial discussions surrounding big data employment and decision-making, enabling the utilisation of big data and analytics insights within large companies. The technical aspects of the unit are presented in a comprehensible and applicable manner, ensuring accessibility for MBA students without prior technical training in big data software applications.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at https://www.mq.edu.au/study/calendar-of-dates

Learning Outcomes

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

ULO1: Explain and define the big data ecosystem and its applications within the context of managerial decision-making processes.

ULO2: Apply data science theories, methodologies, and tools to solve real life business problems.

ULO3: Use tangible and intangible resources to gain insights from large and versatile sets of data and understand the additional requirements needed.

ULO4: Customise big data and data science solutions to various business contexts.

General Assessment Information

Late Assessment Submission Penalty (written assessments)

Unless a Special Consideration request has been submitted and approved, a 5% penalty (of the total possible mark) will be applied each day a written assessment is not submitted, up until the 7th day (including weekends). After the 7th day, a grade of '0' will be awarded even if the assessment is submitted. Submission time for all written assessments is set at 11.55pm. A 1-hour grace period is provided to students who experience a technical concern.

For any late submissions of time-sensitive tasks, such as scheduled tests/exams, performance assessments/presentations, and/or scheduled practical assessments/labs, students need to apply for Special Consideration

Assessment Tasks

Name	Weighting	Hurdle	Due
Individual Assignment	30%	No	Week 6
Final Examination	30%	No	Exam Period
Class contribution	10%	No	Week 1 to Week 10
Group Assignment	30%	No	Week 10

Individual Assignment

Assessment Type [1]: Modelling task
Indicative Time on Task [2]: 20 hours
Due: **Week 6**
Weighting: **30%**

Individual assignments are based on a number of analytics case studies given in class with their relevant datasets. Students will be given a choice to select one of these case studies and perform suitable predictive modelling techniques, including exploratory analysis, modelling and visualisation. Students will be required to submit a report (approx. 5 – 6 pages in length) highlighting the application of insights, concepts, and relevant techniques used to perform the case study outcomes.

On successful completion you will be able to:

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- Customise big data and data science solutions to various business contexts.

Final Examination

Assessment Type [1]: Examination
Indicative Time on Task [2]: 10 hours
Due: **Exam Period**
Weighting: **30%**

A closed book two hour examination will be held during the University Examination Period.

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Class contribution

Assessment Type [1]: Participatory task
Indicative Time on Task [2]: 5 hours
Due: **Week 1 to Week 10**
Weighting: **10%**

Students will be required to participate in in-class discussions.

On successful completion you will be able to:

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- Customise big data and data science solutions to various business contexts.

Group Assignment

Assessment Type [1]: Project
Indicative Time on Task [2]: 20 hours
Due: **Week 10**
Weighting: **30%**

The group will be required to produce a report of no more than 6000 words and present the findings to the class.

On successful completion you will be able to:

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- Use tangible and intangible resources to gain insights from large and versatile sets of data and understand the additional requirements needed.
- Customise big data and data science solutions to various business contexts.

[1] If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the Writing Centre for academic skills support.

[2] Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

The resources for this course will ,ainly be lecture notes and case-studies

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://policies.mq.edu.au). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- Academic Appeals Policy
- Academic Integrity Policy
- Academic Progression Policy
- Assessment Policy
- Fitness to Practice Procedure
- Assessment Procedure
- Complaints Resolution Procedure for Students and Members of the Public
- Special Consideration Policy

Students seeking more policy resources can visit Student Policies (https://students.mq.edu.au/support/study/policies). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

To find other policies relating to Teaching and Learning, visit Policy Central (https://policies.mq.edu.au) and use the search tool.

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/admin/other-resources/student-conduct

Results

Results published on platform other than eStudent, (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in eStudent. For more information visit connect.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Academic Integrity

At Macquarie, we believe academic integrity – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free online writing and maths support, academic skills development and wellbeing consultations.

Student Support

Macquarie University provides a range of support services for students. For details, visit http://students.mq.edu.au/support/

Academic Success

Academic Success provides resources to develop your English language proficiency, academic writing, and communication skills.

- Workshops
- Chat with a WriteWISE peer writing leader
- Access StudyWISE
- Upload an assignment to Studiosity
- Complete the Academic Integrity Module

The Library provides online and face to face support to help you find and use relevant information resources.

- Subject and Research Guides
- Ask a Librarian

Student Services and Support

Macquarie University offers a range of Student Support Services including:

- IT Support
- Accessibility and disability support with study
- Mental health support
- Safety support to respond to bullying, harassment, sexual harassment and sexual assault
- Social support including information about finances, tenancy and legal issues
- Student Advocacy provides independent advice on MQ policies, procedures, and processes

Student Enquiries

Got a question? Ask us via the Service Connect Portal, or contact Service Connect.

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the Acceptable Use of IT Resources Policy. The policy applies to all who connect to the MQ network including students.

Changes since First Published

Date	Description
20/03/2025	Added late assessment penalty

Unit information based on version 2025.06 of the Handbook