



MMBA8113

Big Data and Decision Making

Term 3, Weekday attendance, North Ryde 2021

Department of Actuarial Studies and Business Analytics

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Notice

As part of [Phase 3 of our return to campus plan](#), most units will now run tutorials, seminars and other small group activities on campus, and most will keep an online version available to those students unable to return or those who choose to continue their studies online.

To check the availability of face-to-face activities for your unit, please go to [timetable viewer](#). To check detailed information on unit assessments visit your unit's iLearn space or consult your unit convenor.

General Information

Unit convenor and teaching staff

Nejhdeh Ghevondian

nejhdeh.ghevondian@mq.edu.au

Credit points

10

Prerequisites

MGSM960 or MMBA8160

Corequisites

Co-badged status

Unit description

This unit is a bridge between business and information technology and will equip students with knowledge and skills required to lead and manage big data and data science projects for organisations. Specifically, the unit focuses on data science development practices and the underlying big data applications, on both strategic and operational levels.

More importantly, this unit focuses on transforming business processes through big data and data science, the impact on companies' IT infrastructure, the use of resources to conduct data science workstreams, and identifying the necessary technological underpinnings of big data ecosystem.

The unit is especially tailored for MBA students and business managers with a primary focus on managerial discussions surrounding big data employment and decision making, using big data and analytics insights within large companies. The technical aspect of the unit is on a level comprehensible and applicable to MBA students who do not necessarily possess 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: Develop a broad understanding and knowledge of the Big Data ecosystem and its applications within the context of managerial decision-making processes.

ULO2: Explore Data Science theories, methodologies and tools and their practical

applications 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: Apply and/or customise big data and data science solutions to various business contexts.

Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Class contribution</u>	10%	No	All session
<u>Individual Assignment</u>	15%	No	23 July 2021 11.59pm
<u>Group Assignment and Presentation</u>	35%	No	1 September 2021 11.59pm
<u>Final Examination</u>	40%	No	University Exam Period

Class contribution

Assessment Type ¹: Participatory task

Indicative Time on Task ²: 5 hours

Due: **All session**

Weighting: **10%**

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

On successful completion you will be able to:

- Develop a broad understanding and knowledge of the Big Data ecosystem and its applications within the context of managerial decision-making processes.
- Explore Data Science theories, methodologies and tools and their practical applications to solve real life business problems.
- Use tangible and intangible resources to gain insights from large and versatile sets of data and understand the additional requirements needed.
- Apply and/or customise big data and data science solutions to various business contexts.

Individual Assignment

Assessment Type ¹: Modelling task

Indicative Time on Task ²: 15 hours

Due: **23 July 2021 11.59pm**

Weighting: **15%**

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:

- Develop a broad understanding and knowledge of the Big Data ecosystem and its applications within the context of managerial decision-making processes.
- Explore Data Science theories, methodologies and tools and their practical applications to solve real life business problems.
- Use tangible and intangible resources to gain insights from large and versatile sets of data and understand the additional requirements needed.
- Apply and/or customise big data and data science solutions to various business contexts.

Group Assignment and Presentation

Assessment Type ¹: Project

Indicative Time on Task ²: 20 hours

Due: **1 September 2021 11.59pm**

Weighting: **35%**

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:

- Develop a broad understanding and knowledge of the Big Data ecosystem and its applications within the context of managerial decision-making processes.
- Explore Data Science theories, methodologies and tools and their practical applications to solve real life business problems.
- Use tangible and intangible resources to gain insights from large and versatile sets of data and understand the additional requirements needed.
- Apply and/or customise big data and data science solutions to various business contexts.

Final Examination

Assessment Type ¹: Examination

Indicative Time on Task ²: 15 hours

Due: **University Exam Period**

Weighting: **40%**

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

On successful completion you will be able to:

- Develop a broad understanding and knowledge of the Big Data ecosystem and its applications within the context of managerial decision-making processes.
- Explore Data Science theories, methodologies and tools and their practical applications to solve real life business problems.
- Use tangible and intangible resources to gain insights from large and versatile sets of data and understand the additional requirements needed.
- Apply and/or 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

Class sessions are scheduled from: 6pm to 10pm of every Wednesday from 30th June 2021 (session 1) until 1st September 2021 (session 10).

CBD campus location: Macquarie University City Campus (MUCC). Level 24, 123 Pitt Street, Sydney (please call the MUCC reception desk on (02) 9234 1700 for any problems entering the premises).

Recommended Textbook:

1. Big Data MBA (2016), Bill Schmarzo. Wiley Publishing, ISBN (Hardcover): 978-1119181118

Optional

2. HBR Guide to Data Analytics Basics for Managers (2018), Harvard Business Review Press, ISBN (Hardcover): 978-1633694286

3. Data Science for Business: What You Need to Know about Data Mining and Data-Analytic Thinking (2013), Foster Provost, O'Reilly Media, Inc, ISBN (Hardcover): 978-1449361327

Unit Schedule

(The proposed program might be subject to some minor changes as the term progresses (TBA).

Session	Topics
1	Introduction to Big Data & Data Science
2	Big Data, Best Practices & Managerial Decisions
3	Fundamentals of Statistics
4	Exploratory Data Analysis
5	Introduction to Predictive Modelling – part 1
6	Introduction to Predictive Modelling – part 2
7	Visualisation & Story Telling
8	Big Data Architecture, Operationalisation & Model Management
9	Putting it Altogether – Big Data Business Strategy Roadmap
10	Group Assignment Presentation

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://policies.mq.edu.au\)](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](#)
- [Grade Appeal Policy](#)
- [Complaint Management Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

Students seeking more policy resources can visit [Student Policies \(https://students.mq.edu.au/support/study/policies\)](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 \(https://policies.mq.edu.au\)](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 ask.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Student Support

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

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

- [Getting help with your assignment](#)
- [Workshops](#)
- [StudyWise](#)
- [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

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

If you are a Global MBA student contact globalmba.support@mq.edu.au

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.