



MGSM913

Big Data and Managerial Decisions

Term 2 North Ryde 2019

Department of Actuarial Studies and Business Analytics

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Disclaimer

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General Information

Unit convenor and teaching staff

Lecturer

Nejhdeh Ghevondian

nejhdeh.ghevondian@mq.edu.au

Credit points

4

Prerequisites

MGSM960

Corequisites

Co-badged status

Unit description

This unit is a bridge between business and information technology and will equip the students with knowledge and skills required to lead and manage big data projects. Specifically, the unit focuses on big data applications on both a strategic and operational level. More importantly, this unit focuses on how business processes and business models may be transformed through big data and analytics, the impact of big data on companies' IT infrastructure, the use of resources, especially human resources, to conduct big data analyses, and identify the necessary technological underpinnings of big data and analytics. The unit is especially tailored for MBA students and business managers with a primary focus on managerial discussions surrounding big data deployment 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 by Masters level management 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:

Demonstrate ability to evaluate and synthesise information from diverse data sources and apply the techniques presented in various managerial fields into different analytical business models.

Develop a broad knowledge of the analytics discipline, including, amongst others, strategy, synthesis, systems and security.

Critically reflect on the impact that data analytics has in the context of the organisational decision making.

Apply appropriate data science concepts, theories, techniques and tools to improve the decision making process.

Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Individual Assignment</u>	25%	No	11:59pm, 22nd May 2019
<u>Group Assignment</u>	35%	No	11:59pm, 7th June 2019
<u>Final Examination</u>	40%	No	Exam Week 10 - 15 June, 2019

Individual Assignment

Due: **11:59pm, 22nd May 2019**

Weighting: **25%**

Length:

- **Participation:** every class session
- **Report:** 3,000 words maximum

Format: Case discussion participation and report

Due: Submission in iLearn on or before 11:59pm (Sydney Time) of Wednesday 22nd May 2019

Weighting:

- **Participation:** 10%
- **Report:** 15%

Students will be required to:

- Participate in in-class case discussions
- Undertake the weekly hand-on workshops developing data analytics and modelling exercises
- Write an individual report of 3000 words maximum (including appendices). The most important component of this report is the application of insights, concepts, tools and techniques discussed in class to the student's chosen organisation.

Class contribution: A good class contribution entails active participation in class discussions and adding value and direction to the discussions by sharing student's insights and work experiences relevant to the subject matter. Moreover, student's active participation and contribution to group case discussions in class is another aspect of class contribution. Your mere presence in class and/or e-mail exchanges with your lecturer is not construed as components of class contribution. Students should also be fully prepared with the assigned readings for each session before coming to class and lack of preparation would deduct from their class contribution mark.

The date of submission is planned after the end of the course to ensure students have the opportunity to review all of the material covered in the subject. Students are required to select and make use of topics studied in class in order to (1) draw links to a chosen organisation's function, department or operation, (2) conduct a gap analysis and (3) elaborate a detailed action plan designed to improve the organisation's application of big data and analytics to gain insights and profits over a period of 6 – 18 months.

It is highly recommended the chosen organisation be the student's most recent employer to ensure the assignment is kept real and practical. The report should be written in a concise manner and should be structured in the following way:

1. **Brief description of chosen organisation** and section within the organisation, including a description of the input resources, transformation process and output goods and services.
2. **Gap analysis**
 - **Problem or topic definition.** This section includes the problem or topic definition which is a statement of what your report is about. It defines the main area of opportunity when comparing the current state of the organisation to the best practice tools and techniques studied in class and discussed in the case study
 - **Description of current state.** This includes the issues or factors which draw the organisation back and contribute towards inefficiencies in the way they collect, store, analyse and gain insight from data.
 - **Description of proposed (future) state.** For each of the inefficiencies selected in ii, this section includes a description of the intended state by applying a data analytics and management framework based on the 9S framework discussed in class.
3. **Implementation plan.** This is the most important part of the report. The implementation

plan shows the step by step approach required to close the gap and reach the proposed future state. The selection of the right concepts, tools and techniques is critical to ensure the implementation plan is feasible, pragmatic and real.

4. References and bibliography

Report format

Case study reports should be typed single-spaced, with normal margins, and Times New Roman 12pt font. Clarity and structure are critical elements of success. Use the available pages wisely and forego dwelling on defining terms that are obvious and already known. The report should be written as a professional business type of report, reflecting its practicality, applicability and relevance to the business.

Submission details

Students are to submit 1 x soft-copy of their individual report on or before the due date as listed in the box above. The soft-copy submission will be submitted to Turnitin via the MGSM913 iLearn portal, a program used to ensure the originality of the work undertaken by the submitter.

Only ONE single file must be submitted with **ALL** attachments, displays and charts included within. This can be submitted as a Microsoft Word document (.docx or .doc) or Microsoft PowerPoint presentation (.pptx or .ppt). No file attachments, other than the single Microsoft Word file or single Microsoft PowerPoint presentation will be assessed (please ensure all charts are placed in the one Microsoft Word file).

Please ensure your **full name**, **student number**, **unit code** (MGSM913), **unit name** (Big Data and Managerial Decisions), and **lecturer** (Nejhdeh Ghevondian) is clearly visible on the front page of your assignment. **No MGSM individual assignment coversheet is necessary.**

***Late assignments** will be penalised 10% per each day delay* unless you have applied for special consideration, and that application is considered acceptable. Applications for extensions must be made before the submission date, and will only be granted in exceptional circumstances.*

**For instance if the deadline for submission is 5:00 pm of 1st of June, and the submission happens 5:01 pm of 1st of June, this is considered as one day delay and subject to 10% of total mark deduction.*

On successful completion you will be able to:

- Develop a broad knowledge of the analytics discipline, including, amongst others,

strategy, synthesis, systems and security.

- Critically reflect on the impact that data analytics has in the context of the organisational decision making.

Group Assignment

Due: **11:59pm, 7th June 2019**

Weighting: **35%**

Length:

- **Report:** 6,000 words maximum
- **Presentation:** 20 minutes maximum

Format:

- **Report:** PDF submitted through Turnitin
- **Presentation:** no submission required

Due:

- **Presentations** will occur on 29th May and 5th June 2019 during class times
- **Report:** Final submission on or before 11:59pm, Friday 7th June 2019

Weighting:

- **Report:** 20%
- **Presentation:** 15%

Please note: Syndicate groups will be assigned by the lecturer on the first day of class. Groups might experience minor changes up until the third week after the start of the term.

Group assignments' format are similar to industrial thought leadership papers with no more than 6000 words in total including cover page in the beginning and the references and supplementary information at the end of the paper. The formatting and design of the papers are at the discretion of the students. **Important:** The criteria for marking the papers include: *readability of the report, value-adding information, and creativity in delivering the content and generating new knowledge, extent of the cover of the literature, standard formatting based on industrial benchmarks, and design of the paper.*

Each syndicate group will be assigned a topic by the lecturer once the groups have been formed. A list of some possible topics for investigation is included in the table below.

The deadline for submitting the thought leadership paper is the final exam.

Only one PDF file should be submitted through Turnitin platform in iLearn by the group representative.

Each syndicate group will be required to present the summary of their thought leadership paper in class: (1) the duration of the presentation is no more than 20 minutes with Q&A from the class, and (2) there is no need to submit the hard or soft copy of the presentation. **Important:** The criteria for marking the presentations are: *engaging the audience, introduction to the problem, and seamless flow of presentation (What? Why? How?), maintaining eye contact, satisfactory response to the questions asked by the audience, effective time management in presenting the slides and in Q&A, and design and animations used in the slides.* There are no limitations in the number of slides. ****All members of the group are required to present****

Syndicate group

Examples of big data and analytics topics for the group assignment

1

Big data applications in marketing processes

2

Big data and the future of supply chain management

3

Big data and optimizing quantitative decision-making models

4

Big data analytics and re-defining current statistical models

5

Big data and banking and finance

6

Big data and healthcare

7

Big data and customer relationship management

8

Big data and business process management

9

Big data and text mining applications

10

Big data and predictive maintenance

Late assignments will be penalised 10% per each day delay* unless you have applied for special consideration, and that application is considered acceptable. Applications for extensions must be made before the submission date, and will only be granted in exceptional circumstances.

*For instance if the deadline for submission is 5:00 pm of 1st of June, and the submission happens 5:01 pm of 1st of June, this is considered as one day delay and subject to 10% of total mark deduction.

On successful completion you will be able to:

- Demonstrate ability to evaluate and synthesise information from diverse data sources and apply the techniques presented in various managerial fields into different analytical business models.
- Develop a broad knowledge of the analytics discipline, including, amongst others, strategy, synthesis, systems and security.
- Apply appropriate data science concepts, theories, techniques and tools to improve the decision making process.

Final Examination

Due: **Exam Week 10 - 15 June, 2019**

Weighting: **40%**

The final examination will concern all the material (*assigned readings, class lectures, group presentations and classroom discussions*) from the entire unit. The specific format of the exam will be case studies as well as essay questions.

The MGSM examination period in Term 2 2019 is from 10 – 15 June 2019.

You are expected to present yourself for examination at the time and place designated in the MGSM Examination Timetable. The timetable will be available on 26 April 2019 at

<https://students.mgsm.edu.au/sydney-students/units/exams/>

EXCEPTIONAL CIRCUMSTANCES: Alternate exam date

Students are expected to sit their examinations on the specified date and time during the examination period.

Only in **exceptional** circumstances (i.e. in the event of serious illness, injury or death of a close family member, unavoidable pre-scheduled overseas/interstate work trip) will alternative arrangements be considered. **In the event of illness, students must submit a medical**

certificate within 48 hours of the date of the missed exam.

For the purpose of adhering to the Master Degree Regulations, Academic Senate will also treat as unavoidable disruption cases where the student has been prevented from attending an examination for the following reasons:

As a member of the armed forces involved in compulsory exercises

As a person in full-time employment required to be overseas by his or her employer

As a person representing their country at an international sporting or cultural competition

Students, who for any of the reasons set out above, cannot sit in the exam period, must advise their lecturer and submit a Request for an Alternate Exam Date form which can be downloaded from the student website at <https://students.mgsm.edu.au/media/documents/ss-forms/Request-Alternate-Exam-Date.pdf>.

Full supporting documentation must be attached to any request proposing to sit an exam outside of the scheduled time. Upon approval, an alternate exam date will be advised.

If an alternate exam date is granted, the examination will be scheduled after the conclusion of the official examination period. You are advised that it is Macquarie University policy not to set early examinations for individuals or groups of students. All students are expected to ensure that they are available until the end of the teaching term that is the final day of the official examination period.

On successful completion you will be able to:

- Apply appropriate data science concepts, theories, techniques and tools to improve the decision making process.

Delivery and Resources

Recommended Text:

Lake P., Drake R. (2014). *Information Systems Management in the Big Data Era*. Springer International Publishing, **ISBN (Hardcover):** 978-3-319-13502-1, **ISBN (Softcover):** 978-3-319-35507-8, **DOI:** 10.1007/978-3-319-13503-8

For information on textbook prices and online ordering, please refer to the Co-Op Bookshop webpage at <http://www.coop.com.au>

Readings List:

- (HBR) Big Data: The Management Revolution (2012)
- Mini-case: WALMART: How Big Data Is Used to Drive Supermarket Performance
- (MIS Quarterly) Business Intelligence and Analytics: From Big Data to Big Impact (2012)

- (HBS) An Introduction to NoSQL Database Design (2016)
- Mini-case: How Netflix Used Big Data To Give Us The Programmes We Want
- (HBS) Big Data Dreams: A Framework for Corporate Strategy (2017)
- Case Study: (HBS) Neighbourhood Watch: The Rise of Zillow (2017)
- Discussion: How has the rise of big data and analytics affected business models and strategic frameworks of industries and services in Australia
- (HBR) How Big Data Explosion has Changed Decision Making (2016)
- Mini-case: BBC: How Big Data Is Used in The Media1
- (HBR) Data Scientist: The Sexiest Job of the 21st Century (2012)
- (MIT Sloan) Should You Outsource Analytics? (2014)
- Laha A. (2016) Statistical Challenges with Big Data in Management Science. In: Pyne S., Rao B., Rao S. (eds) Big Data Analytics. Springer, New Delhi
- Batra S., Sachdeva S. (2016) Managing Large-Scale Standardized Electronic Health Records. In: Pyne S., Rao B., Rao S. (eds) Big Data Analytics. Springer, New Delhi
- (HBS) Alibaba Group: Technology, Strategy and Sustainability (2016)
- (HBS) Netguardians: Beating Fraud from The Inside (2016)
- (HBS) Shotspotter: Public Safety, IoT, and Big Data (2017)
- (MIT Sloan) Building A More Intelligent Enterprise (2017)
- McKinsey Global Institute Report: The Age of Analytics: Competing in a Data-Driven World (2016)

Where to purchase textbook?

The Coop Bookshop

The Coop Bookshop is our main retailer for textbooks and other related academic material. For information on textbook prices and online ordering, please refer to The Co-Op Bookshop webpage at <http://www.coop.com.au>

Pearson Education Australia – Online store

This textbook is also available for order via the publisher's online store. For information on textbook prices and online ordering, please refer to the Pearson Education Australia online store at <http://www.pearson.com.au/9781292098678>.

eBook disclaimer

Please note that although this unit has an open book final examination, only hard-copy versions of this textbook will be allowed into the examination room. eBooks will not be allowed in the examination room, but you can however print your eBook out and bring the printed copy into the examination room. Students who wish purchase the eBook and have it printed must do so at their own expense. MGSM will not be providing printing services of eBooks.

Disclaimer: MGSM does not take responsibility for the stock levels of required textbooks from preferred retail outlets and other book retailers. While we advise our preferred book retail outlet, The Co-op Bookshop, of our maximum expected number of students purchasing specific required text each term, The Co-op Bookshop and other book retailers will make their own judgement in regards to their physical holding stock levels. To prevent disappointment if a textbook is out-of-stock, we highly advise students to order their textbooks as early as possible, or if the required textbook is currently out-of-stock, place an order with the book retailer as soon as possible so that these book retailers can monitor demand and supply, and adjust their stock orders accordingly.

Further sources of information:

Top academic management and information systems outlets (some suggestions)

- Harvard business review
- MIT Sloan Review
- MIS Quarterly
- Information Sciences
- Information Systems Research

Useful academic databases (DB), search engines (SE), and publishers (PB)

- Emerald Insight (DB)
- Elsevier (DB)
- Scopus (SE)
- Web of Science (SE)
- Wiley (PB)
- Springer (PB)

Useful Industry databases

- IBISWorld
- Factiva
- EBSCO Business Searching Interface

Writing resources

If you lack confidence in writing in English, particularly academic writing and/or business reports, The Macquarie University Library provides three excellent web sites covering writing skills, researching online and a guide to citations and referencing http://www.students.mq.edu.au/support/learning_skills/

<http://www.mq.edu.au/about/campus-services-and-facilities/library>

MGSM iLearn

The web page for this unit can be found at: <https://ilearn.mq.edu.au/login/MGSM>

Unit Schedule

Students are required to attend **all** classes. **No delays** are allowed in coming to the class unless it has been permitted by the lecturer at least a day before class.

The unit will be presented over 10 weeks as follows:

Wednesdays 6 pm to 10 pm (unless specified otherwise below)

Session	Date	Topic	Required Readings
1	3 April 2019	<p><u>Introduction to Big Data & Analytics (Part 1)</u></p> <ul style="list-style-type: none"> • Introduction to Big Data and Analytics (Part 1) • Big Data Analytics Software and Platforms 	<p>1. Textbook: <i>Chapter 1</i></p> <p>2. <i>The Management Revolution</i></p> <p>3. <i>WALMART: How Big Data Is Used to Drive Supermarket Performance</i></p>
2	10 April 2019	<p><u>Introduction to Big Data & Analytics (Part 2)</u></p> <ul style="list-style-type: none"> • Introduction to Big Data and Analytics (Part 2) • Introduction to Data Science Framework & Best Practices 	<p>1. Textbook: <i>Chapter 1</i></p> <p>2. <i>From Big Data to Big Impact</i></p> <p>3. <i>An Introduction to NoSQL Database Design</i></p> <p>4. <i>How Netflix Used Big Data To Give Us The Programmes We Want</i></p>
3	17 April 2019	<p><u>Big Data Strategy & Azure Platform Introduction Workshop #1</u></p> <ul style="list-style-type: none"> • The 9S Framework: Big Data and Strategy <p><u>Discussion:</u></p> <ul style="list-style-type: none"> • How has the rise of big data and analytics affected business models and strategic frameworks of industries and services in Australia? <p><u>Workshop #1</u></p> <ul style="list-style-type: none"> • Introduction to Microsoft Azure Platform 	<p>1. Textbook: <i>Chapter 2</i></p> <p>2. <i>Big Data Dreams: A Framework for Corporate Strategy</i></p> <p>3. <i>Case Study: Neighbourhood Watch: The Rise of Zillow</i></p>

Session	Date	Topic	Required Readings
4	24 April 2019	<p><u>Big Data Structure, Style & Data Science Hands-on Workshop #2</u></p> <ul style="list-style-type: none"> The 9S Framework: Big Data and Structure and Style Microsoft Azure Case <p><u>Workshop #2</u></p> <ul style="list-style-type: none"> Data Explorative Analysis Data Science Use Case examples: <ul style="list-style-type: none"> Demand Estimation Milk Production Forecasting 	<p>1. Textbook: <i>Chapters 3-4</i></p> <p>2. <i>How Big Data Explosion Has Changed Decision Making</i></p> <p>3. <i>BBC: How Big Data Is Used in The Media</i></p>
5	1 May 2019	<p><u>Big Data Staff, Synthesis & Data Science Hands-on Workshop #3</u></p> <ul style="list-style-type: none"> The 9S Framework: Big Data and Staff and Synthesis <p><u>Discussion:</u></p> <ul style="list-style-type: none"> What are various 'data scientist' jobs offered in Australia? What specific skills are required for this job? Is being a data scientist relevant to management? How? How do you see the future of this profession? <p><u>Workshop #3</u></p> <ul style="list-style-type: none"> Machine Learning and it's Application Case Samples: <ul style="list-style-type: none"> Predict Employee retention Walmart Sales Forecasting 	<p>1. Textbook: <i>Chapters 5 and 7</i></p> <p>2. <i>Data Scientist: The Sexiest Job of the 21st Century</i></p> <p>3. <i>Should You Outsource Analytics?</i></p>
6	8 May 2019	<p><u>Big Data Statistical Thinking & Data Science Hands-on Workshop #4</u></p> <ul style="list-style-type: none"> The 9S Framework: Big Data and Statistical Thinking <p><u>Workshop #4</u></p> <ul style="list-style-type: none"> Further Statistical, Advanced Machine Learning and it's Applications <ol style="list-style-type: none"> Heart Disease Prediction Neural Network Classification Deep AI and its Applications 	<p>1. Textbook: <i>Chapter 6</i></p> <p>2. <i>Statistical Challenges with Big Data in Management Science</i></p> <p>3. <i>Managing Large-Scale Standardized Electronic Health Records</i></p>
7	15 May 2019	<p><u>Big Data Systems, Sources & Data Science Hands-on Workshop #5</u></p> <ul style="list-style-type: none"> The 9S Framework: Big Data and Systems and Sources <p><u>Workshop #5</u></p> <ul style="list-style-type: none"> Storytelling & Visualisation Sample case: Visualising results in Power BI 	<p>1. Textbook: <i>Chapters 8-9</i></p> <p>2. <i>Alibaba Group: Technology, Strategy and Sustainability</i></p>
8	22 May 2019	<p><u>Big Data Systems, Security & Group Presentation #1</u></p> <ul style="list-style-type: none"> The 9S Framework: Big Data and Systems and IS Security <p>Group Presentations</p>	<p>1. Textbook: <i>Chapters 10-11</i></p> <p>2. <i>Netguardians: Beating Fraud from The Inside</i></p>

Session	Date	Topic	Required Readings
9	29 May 2019	<p><u>Big Data Applications, Disruptive Technologies & Group Presentation #2</u></p> <ul style="list-style-type: none"> Big Data Applications with Disruptive Technologies <p>Group Presentations</p>	<p>1. Textbook: <i>Chapter 12</i></p> <p>2. <i>Shotspotter: Public Safety, IoT, and Big Data</i></p>
10	5 June 2019	<p><u>Further Discussion, Case Studies & Exam</u></p> <ul style="list-style-type: none"> Further Big Data Topic Discussions Exam Preparation <p>Group Presentations – if required</p>	<p>1. Textbook: <i>Chapter 1 – 12</i></p> <p>2. <i>Building A More Intelligent Enterprise</i></p> <p>3. <i>The Age of Analytics: Competing in a Data-Driven World</i></p>
10 - 15 June 2019			Final exam week

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). 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](#) (**Note:** *The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.*)

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

If you would like to see all the policies relevant to Learning and Teaching visit [Policy Central \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/study/getting-started/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 improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

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.

Graduate Capabilities

PG - Capable of Professional and Personal Judgment and Initiative

Our postgraduates will demonstrate a high standard of discernment and common sense in their professional and personal judgment. They will have the ability to make informed choices and decisions that reflect both the nature of their professional work and their personal perspectives.

This graduate capability is supported by:

Learning outcome

- Critically reflect on the impact that data analytics has in the context of the organisational decision making.

Assessment task

- Individual Assignment

PG - Discipline Knowledge and Skills

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen fields.

This graduate capability is supported by:

Learning outcomes

- Demonstrate ability to evaluate and synthesise information from diverse data sources and apply the techniques presented in various managerial fields into different analytical business models.
- Develop a broad knowledge of the analytics discipline, including, amongst others, strategy, synthesis, systems and security.
- Apply appropriate data science concepts, theories, techniques and tools to improve the decision making process.

Assessment tasks

- Individual Assignment
- Group Assignment
- Final Examination

PG - Critical, Analytical and Integrative Thinking

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is

the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

This graduate capability is supported by:

Learning outcomes

- Demonstrate ability to evaluate and synthesise information from diverse data sources and apply the techniques presented in various managerial fields into different analytical business models.
- Develop a broad knowledge of the analytics discipline, including, amongst others, strategy, synthesis, systems and security.
- Critically reflect on the impact that data analytics has in the context of the organisational decision making.
- Apply appropriate data science concepts, theories, techniques and tools to improve the decision making process.

Assessment task

- Final Examination

PG - Research and Problem Solving Capability

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

This graduate capability is supported by:

Learning outcomes

- Demonstrate ability to evaluate and synthesise information from diverse data sources and apply the techniques presented in various managerial fields into different analytical business models.
- Apply appropriate data science concepts, theories, techniques and tools to improve the decision making process.

Assessment tasks

- Group Assignment
- Final Examination

PG - Effective Communication

Our postgraduates will be able to communicate effectively and convey their views to different social, cultural, and professional audiences. They will be able to use a variety of technologically

supported media to communicate with empathy using a range of written, spoken or visual formats.

This graduate capability is supported by:

Assessment tasks

- Individual Assignment
- Group Assignment

Alignment with MGSM's mission-driven attributes

- **Leadership:** Develop skills required of leaders with respect to the applications of big data in order to make well-informed and financially robust operational, tactical and strategic decisions.
- **Global mindset:** Assessment of the implications of strategic decisions based on information systems from a whole of entity perspective, across a wide spectrum of stakeholders and diverse international contexts.
- **Citizenship:** Apply a true and fair view approach to big data and managerial decision making where discretion exists related to accountability and ethical practices.
- **Creating sustainable value:** Adoption of a forward-looking perspective on the impact of data-informed decisions on the operations position vis-à-vis business, environmental and social sustainability.

Attendance Policy (MGSM)

The interactive environment of the classroom is central to the MGSM experience. Students are required to attend the full duration of all classes for the units in which they are enrolled. We recognise that exceptional circumstances may occur, such as unavoidable travel on behalf of your organization or the serious illness or injury of you or a close family member.

Special consideration may be given for a maximum of 20% non-attendance for such circumstances as long as lecturers are contacted in advance, and supporting documentation provided, to request exemption from attendance. Failure to abide by these conditions may result in automatic withdrawal, with academic and/or financial penalty. The full Student Attendance Policy is published in the MGSM Student Handbook at <https://students.mgsm.edu.au/handbook>.

Content Disclaimer

These unit materials and the content of this unit are provided for educational purposes only and no decision should be made based on the material without obtaining independent professional advice relating to the particular circumstances involved.