UNSW Course Outline

MNGT5234 Data Analytics and Decision-making (Full-time, Session 2, Kensington) - 2024

Published on the 14 May 2024

General Course Information

Course Code : MNGT5234
Year : 2024
Term : Term 2
Teaching Period : T2
Is a multi-term course? : No
Faculty : UNSW Business School
Academic Unit : AGSM MBA Programs
Delivery Mode : In Person
Delivery Format : Standard
Delivery Location : Kensington
Campus : Sydney
Study Level : Postgraduate
Units of Credit : 6

Useful Links

Handbook Class Timetable

Course Details & Outcomes

Course Description

Evidence-based decision-making supported by a data-driven culture is essential to the

management of organisations. It is therefore essential that professionals are able to define problems clearly and systematically, know what techniques can be applied in order to solve these problems, and communicate the results concisely and effectively.

The first step in the process of data analysis and decision-making is to frame business problems in a quantitative matter and learn how data collection and experimentation can help provide the right insights.

As the second step, you will learn how to solve problems through predictive models. This requires a basic understanding of statistics and therefore you study the basics of regression during the first weeks of the course. This will help improve your data literacy in order to communicate more effectively with data scientists as well as contribute to the democratisation of data within your business.

Finally, you will learn the basics of two visualisation and data analytics tools in the field. Through data storytelling, you will learn to communicate data more effectively and improve your ability to simplify problems and facilitate decision-making.

With these three steps, this course will enable you to make quicker, better and more intelligent decisions and allow you to create value in the broadest sense within your business.

Relationship to Other Courses

There are no pre-requisites for studying this course. Participants are assumed to have no prior knowledge of data analytics.

Course Learning Outcomes

Course Learning Outcomes	Program learning outcomes
CLO1 : Understand how data analytics can support the business decision-making process	• PLO1 : Business Knowledge
CLO2 : Improve data literacy, basic statistical knowledge and learn simple predictive modelling	• PLO1 : Business Knowledge
CLO3 : Simplify complicated problems and communicate results from data concisely and effectively in order to facilitate decision-making	• PLO3 : Business Communication
CLO4 : Collaborate and interact with others to fulfil a common business project	• PLO4 : Teamwork
CLO5 : Understand what data analytics, data platforms and data governance are and how they are needed to foster data democracy and a data-driven organisation	• PLO5 : Responsible Business Practice
CLO6 : Understand how data can help solve large global problems as defined in the UN Sustainable Development Goals	• PLO2 : Problem Solving
CLO7 : Think analytically using data to increase your capability as a manager and to support your business intuition	• PLO2 : Problem Solving
CLO8 : Discuss nuances in perception of ethical data usage globally as caused by cultural and geographical differences.	• PLO6 : Global and Cultural Competence

Course Learning Outcomes	Assessment Item
CLO1 : Understand how data analytics can support the business decision-making process	• Assessment 1: Participation and engagement • Assessment 2: Reflection on Harvard Data Analytics Simulation, strategic decision-making and data strategy • Assessment 4 Part A: Data storytelling presentation
CLO2 : Improve data literacy, basic statistical knowledge and learn simple predictive modelling	• Assessment 3: Quantitative methods online course: Regression • Assessment 1: Participation and engagement • Assessment 4 Part A: Data storytelling presentation
CLO3 : Simplify complicated problems and communicate results from data concisely and effectively in order to facilitate decision-making	• Assessment 4 Part B: Individual reflection • Assessment 2: Reflection on Harvard Data Analytics Simulation, strategic decision-making and data strategy • Assessment 1: Participation and engagement • Assessment 4 Part A: Data storytelling presentation
CLO4 : Collaborate and interact with others to fulfil a common business project	• Assessment 4 Part B: Individual reflection • Assessment 4 Part A: Data storytelling presentation
CLO5 : Understand what data analytics, data platforms and data governance are and how they are needed to foster data democracy and a data-driven organisation	• Assessment 3: Quantitative methods online course: Regression • Assessment 2: Reflection on Harvard Data Analytics Simulation, strategic decision-making and data strategy • Assessment 4 Part B: Individual reflection • Assessment 1: Participation and engagement • Assessment 4 Part A: Data storytelling presentation
CLO6 : Understand how data can help solve large global problems as defined in the UN Sustainable Development Goals	• Assessment 3: Quantitative methods online course: Regression • Assessment 2: Reflection on Harvard Data Analytics Simulation, strategic decision-making and data strategy • Assessment 1: Participation and engagement • Assessment 4 Part A: Data storytelling presentation
CLO7 : Think analytically using data to increase your capability as a manager and to support your business intuition	• Assessment 2: Reflection on Harvard Data Analytics Simulation, strategic decision-making and data strategy • Assessment 1: Participation and engagement
CLO8 : Discuss nuances in perception of	• Assessment 3: Quantitative methods online

ethical data usage globally as caused by cultural and geographical differences.	course: Regression • Assessment 2: Reflection on Harvard Data Analytics Simulation, strategic decision-making and data strategy • Assessment 1: Participation and engagement • Assessment 4 Part A: Data storytelling presentation

Learning and Teaching Technologies

Moodle - Learning Management System | Zoom

Additional Course Information

The course aims to encourage analytical thinking. It will encourage you to develop your abilities to understand and use data. It is designed to equip managers with the data literacy skills to make effective use of data in the business workplace, to develop expertise in a standard set of techniques that will be useful in analysing data, and to learn to apply these techniques in a number of areas of management.

Structure:

There are 10 weekly Units of materials as follows.

Unit 1: Responsible Management in the Context of Data

Unit 2: Introduction to Data Analytics and Decision-making

Unit 3: Data Strategy

Unit 4: Basic Probability and Regression

Unit 5: Probability and Practical Applications (with an appendix at the end of the eBook: Overview of Useful Probability Distributions)

Unit 6: Introduction to Decision-making

Unit 7: Fundamentals of Hypothesis Testing and Introduction to Data Visualisation

Unit 8: Fundamentals of Data Visualisation and Communication

Unit 9: The Data Analytics Process and Fundamentals of Model-building Techniques in Artificial Intelligence, Machine Learning and Neural Networks

Unit 10: Data Analytics and AI - Driving, Creating and Capturing Value

Responsible Management Curriculum at AGSM:

The Responsible Management Curriculum at AGSM is a whole-of-program systematic approach to embedding responsible management in your MBA education. This includes ethical, sustainable and inclusive decision-making and action. The curriculum offers an optional component enabling you to achieve an additional credential.

Responsible Management Foundations

You will complete this module as part of your *Foundations of Management* course. It will help you to understand the fundamental challenges encountered by leaders today and to acquire the skills that can help you to solve them.

During MBA Core Courses

Responsible Management in Context: Week 1 of every core course includes content on the material issues relating to responsible management in that discipline. This will help you to understand these material issues and to apply your foundational knowledge of responsible management to solving these most challenging problems faced by managers today.

Responsible Management in Action: You will have the opportunity to engage in guided discussions with thought leaders in responsbile management. These sessons are optional. However, they are a requirement for those students seeking to become an AGSM Fellow of Responsible Management.

Post-MBA (optional) - Fellowship of Responsible Management

Students have the opportunity to achieve the credential 'AGSM Fellow of Responsible Management'. This requires participation in *Responsible Management in Action* (see above) each term and submission of a Responsible Management Portfolio prior to graduation. The final requirement is for each applicant to complete a viva in front of a panel of esteemed leaders at graduation. Successful candidates will be awarded the postnominal FRM and a digital credential.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates	Program learning outcomes
Assessment 1: Participation and engagement Assessment Format: Individual	20%	Due Date: Ongoing throughout the term	• PLO1 : Business Knowledge • PLO2 : Problem Solving • PLO3 : Business Communication • PLO5 : Responsible Business Practice • PLO6 : Global and Cultural Competence
Assessment 2: Reflection on Harvard Data Analytics Simulation, strategic decision-making and data strategy Assessment Format: Individual	25%	Due Date: Thursday of Week 4 by 3pm Sydney time	• PLO1 : Business Knowledge • PLO2 : Problem Solving • PLO3 : Business Communication • PLO5 : Responsible Business Practice • PLO6 : Global and Cultural Competence
Assessment 3: Quantitative methods online course: Regression Assessment Format: Individual	20%	Due Date: Friday of Week 6 by 3pm Sydney time	• PLO1 : Business Knowledge • PLO2 : Problem Solving • PLO5 : Responsible Business Practice
Assessment 4 Part A: Data storytelling presentation Assessment Format: Group	30%	Due Date: Week 10 in class	• PLO1 : Business Knowledge • PLO2 : Problem Solving • PLO3 : Business Communication • PLO4 : Teamwork • PLO5 : Responsible Business Practice
Assessment 4 Part B: Individual reflection Assessment Format: Individual	5%	Due Date: Monday of Week 12 by 3pm Sydney time	• PLO3 : Business Communication • PLO4 : Teamwork • PLO5 : Responsible Business Practice

Assessment Details

Assessment 1: Participation and engagement

Assessment Overview

This assessment requires participation and engagement with other students on relevant discussion topics throughout the term.

Course Learning Outcomes

- CLO1 : Understand how data analytics can support the business decision-making process
- CLO2 : Improve data literacy, basic statistical knowledge and learn simple predictive modelling
- CLO3 : Simplify complicated problems and communicate results from data concisely and effectively in order to facilitate decision-making
- CLO5 : Understand what data analytics, data platforms and data governance are and how they are needed to foster data democracy and a data-driven organisation
- CLO6 : Understand how data can help solve large global problems as defined in the UN Sustainable Development Goals
- CLO7 : Think analytically using data to increase your capability as a manager and to support your business intuition
- CLO8 : Discuss nuances in perception of ethical data usage globally as caused by cultural and geographical differences.

Assessment Length

N/A

Assessment 2: Reflection on Harvard Data Analytics Simulation, strategic decision-making and data strategy

Assessment Overview

This assessment covers materials from the Harvard Data Analytics Simulation on strategic decision-making and data strategy. This will ensure a strategic understanding underlying the themes of data analytics and decision-making.

Course Learning Outcomes

- CLO1 : Understand how data analytics can support the business decision-making process
- CLO3 : Simplify complicated problems and communicate results from data concisely and effectively in order to facilitate decision-making
- CLO5 : Understand what data analytics, data platforms and data governance are and how they are needed to foster data democracy and a data-driven organisation
- CLO6 : Understand how data can help solve large global problems as defined in the UN Sustainable Development Goals
- CLO7 : Think analytically using data to increase your capability as a manager and to support your business intuition
- CLO8 : Discuss nuances in perception of ethical data usage globally as caused by cultural and geographical differences.

Assessment Length

2,000 words (excluding figures, references and any appendix)

Assessment 3: Quantitative methods online course: Regression

Assessment Overview

Complete an online course and assessment to evaluate knowledge of regression techniques.

Course Learning Outcomes

- CLO2 : Improve data literacy, basic statistical knowledge and learn simple predictive modelling
- CLO5 : Understand what data analytics, data platforms and data governance are and how they are needed to foster data democracy and a data-driven organisation
- CLO6 : Understand how data can help solve large global problems as defined in the UN Sustainable Development Goals
- CLO8 : Discuss nuances in perception of ethical data usage globally as caused by cultural and geographical differences.

Assessment Length

N/A

Assessment 4 Part A: Data storytelling presentation

Assessment Overview

In this assessment, you will use framework for quantitative decision-making to frame a problem, solve it analytically and communicate your findings and recommendations through a presentation.

Course Learning Outcomes

- CLO1 : Understand how data analytics can support the business decision-making process
- CLO2 : Improve data literacy, basic statistical knowledge and learn simple predictive modelling
- CLO3 : Simplify complicated problems and communicate results from data concisely and effectively in order to facilitate decision-making
- CLO4 : Collaborate and interact with others to fulfil a common business project
- CLO5 : Understand what data analytics, data platforms and data governance are and how they are needed to foster data democracy and a data-driven organisation
- CLO6 : Understand how data can help solve large global problems as defined in the UN Sustainable Development Goals
- CLO8 : Discuss nuances in perception of ethical data usage globally as caused by cultural and geographical differences.

Assessment Length

10 minutes

Assessment 4 Part B: Individual reflection

Assessment Overview

You will submit a reflective report about your contribution to Part A and what you learned from this project, areas for improvement and providing your evaluation of how your peers contributed to Part A

Course Learning Outcomes

- CLO3 : Simplify complicated problems and communicate results from data concisely and effectively in order to facilitate decision-making
- CLO4 : Collaborate and interact with others to fulfil a common business project
- CLO5 : Understand what data analytics, data platforms and data governance are and how they are needed to foster data democracy and a data-driven organisation

Assessment Length

300-1,000 words

General Assessment Information

Grading Basis

Standard

Requirements to pass course

Students are expected to attempt all assessment requirements, and must achieve a composite mark of at least 50 out of 100 to pass the course.

Students are also expected to actively engage in course learning activities. Failure to engage in assessment tasks that are integrated into learning activities (e.g. class discussion, presentations) will be reflected in the marks for these assessable activities.

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 27 May - 2 June	Topic	Unit 1 Responsible Management in the context of Data
	Assessment	Assessment 1: Participation and Engagement
Week 2 : 3 June - 9 June	Topic	Unit 2 Introduction to Data Analytics and Decision-making
	Assessment	Assessment 1: Participation and Engagement
Week 3 : 10 June - 16 June	Topic	Unit 3 Data Strategy
	Assessment	Assessment 1: Participation and Engagement
Week 4 : 17 June - 23 June	Topic	Unit 4 Basic Probability and Regression
	Assessment	Assessment 1: Participation and Engagement Assessment 2: Reflection on Harvard Data Analytics Simulation, Strategic Decision Making and on Data Strategy, due on Thursday by 3pm Sydney time
Week 5 : 24 June - 30 June	Topic	Unit 5 Probability and Practical Applications
	Assessment	Assessment 1: Participation and Engagement
Week 6 : 1 July - 7 July	Other	Independent Study Week
	Assessment	Assessment 3: Quantitative methods online course - Regression due on Friday by 3pm Sydney time
Week 7 : 8 July - 14 July	Topic	Unit 6 Introduction to Decision-making
	Assessment	Assessment 1: Participation and Engagement
Week 8 : 15 July - 21 July	Topic	Unit 7 Fundamentals of Hypothesis Testing and Introduction to Data Visualisation
	Assessment	Assessment 1: Participation and Engagement
Week 9 : 22 July - 28 July	Topic	Unit 8 Fundamentals of Data Visualisation and Communication
	Assessment	Assessment 1: Participation and Engagement
Week 10 : 29 July - 4 August	Topic	Unit 9 The Data Analytics Process and Fundamentals of Model-building Techniques in Artificial Intelligence, Machine Learning and Neural Networks
	Assessment	Assessment 1: Participation and Engagement Assessment 4 Part A: Data storytelling presentation due in class
Week 11 : 5 August - 11 August	Topic	Unit 10 Data Analytics and AI - Driving, Creating and Capturing Value
	Assessment	Assessment 1: Participation and Engagement
Week 12 : 12 August - 18 August	Assessment	Assessment 4 Part B: Individual reflection due on Monday by 3pm Sydney time

Attendance Requirements

Students must attend the scheduled in-person three-hour facilitated class discussions.

Course Resources

Prescribed Resources

You have three major resources to help you learn:

- The course materials, which you will access via your Moodle class.
- Your interaction with your facilitator. The facilitator's job is to guide your learning by conducting the class discussion, answering questions that might arise after you have done the week's work, providing insights from their practical experience and understanding of theory, providing you with feedback on your assessments, and directing discussions and

debates that will occur between you and your co-participants in the course.
- Your co-participants. Your class colleagues are an invaluable potential source of learning for you. Their work and life, and their willingness to question and argue with the course materials, the facilitator and your views, represent a great learning opportunity. They bring much valuable insight to the learning experience.

Other Resources

BusinessThink is UNSWs free, online business publication. It is a platform for business research, analysis and opinion. If you would like to subscribe to BusinessThink and receive the free monthly e-newsletter with the latest in research, opinion and business then go to the BusinessThink website.

Course Evaluation and Development

We have taken out some of the more quantitative aspects of the course materials in the eBook and replaced them with a unit on Data Strategy. We have also reviewed the assessments and replaced the most problematic and challenging one (an online quantitative assessment) with a written reflection on the Data Analytics Simulation, Strategic Decision-Making and Digital Strategy.

We have made further improvements to Units 4, 5 and 6 to enhance the flow of content. In addition, updates have been made to Units 1, 9 and 10.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Facilitator	Bin Huang					No	Yes

Other Useful Information

Academic Information

COURSE POLICIES AND SUPPORT

The Business School expects that you are familiar with the contents of this course outline and the UNSW and Business School learning expectations, rules, policies and support services as listed below:

- Program Learning Outcomes
- Academic Integrity and Plagiarism
- Student Responsibilities and Conduct
- Special Consideration
- Protocol for Viewing Final Exam Scripts
- Student Learning Support Services

Further information is provided on the key policies and support page.

Students may not circulate or post online any course materials such as handouts, exams, syllabi or similar resources from their courses without the written permission of their instructor.

STUDENT LEARNING OUTCOMES

The Course Learning Outcomes (CLOs) – under the Outcomes tab – are what you should be able to demonstrate by the end of this course, if you participate fully in learning activities and successfully complete the assessment items.

CLOs also contribute to your achievement of the Program Learning Outcomes (PLOs), which are developed across the duration of a program. PLOs are, in turn, directly linked to UNSW graduate capabilities. More information on Coursework PLOs is available on the key policies and support page. For PG Research PLOs, including MPDBS, please refer to the UNSW HDR Learning Outcomes.

Academic Honesty and Plagarism

As a student at UNSW you are expected to display academic integrity in your work and interactions. Where a student breaches the UNSW Student Code with respect to academic integrity, the University may take disciplinary action under the Student Misconduct Procedure. To assure academic integrity, you may be required to demonstrate reasoning, research and the process of constructing work submitted for assessment.

To assist you in understanding what academic integrity means, and how to ensure that you do comply with the UNSW Student Code, it is strongly recommended that you complete the Working with Academic Integrity module before submitting your first assessment task. It is a free, online self-paced Moodle module that should take about one hour to complete.

Submission of Assessment Tasks

SPECIAL CONSIDERATION

You can apply for special consideration when illness or other circumstances beyond your control interfere with your performance in a specific assessment task or tasks, including online exams. Students studying remotely who have exams scheduled between 10pm and 7am local time, are also able to apply for special consideration to sit a supplementary exam at a time outside of these hours.

Special consideration is primarily intended to provide you with an extra opportunity to demonstrate the level of performance of which you are capable. To apply, and for further information, see Special Consideration on the UNSW Current Students page.

Special consideration applications will be assessed centrally by the Case Review Team, who will update the online application with the outcome and add any relevant comments. The change to the status of the application immediately sends an email to the student and to the assessor with the outcome of the application.

Please note the following:

1. Applications can only be made through Online Services in myUNSW (see the UNSW Current Students page). Applications will not be accepted by teaching staff. The lecturer-in-charge/ course coordinator will be automatically notified when your application is processed.
2. Applying for special consideration does not automatically mean that you will be granted a supplementary exam or other concession.
3. If you experience illness or misadventure in the lead up to an exam or assessment, you must submit an application for special consideration, either prior to the examination taking place, or prior to the assessment submission deadline, except where illness or misadventure prevent you from doing so.
4. If your circumstances stop you from applying before your exam or assessment due date, you must apply within 3 working days of the assessment or the period covered by your supporting documentation.
5. Under the UNSW Fit To Sit/Submit rule, if you sit the exam/submit an assignment, you are declaring yourself well enough to do so and are cannot subsequently apply for special consideration.
6. If you become unwell on the day of – or during – an exam, you must stop working on your exam, advise your course coordinator or tutor and provide a medical certificate dated within 24 hours of the exam, with your special consideration application. For online exams, you must contact your course coordinator or tutor immediately via email, Moodle or chat and advise them you are unwell and submit screenshots of your conversation along with your medical certificate and application.
7. Special consideration requests do not allow the awarding of additional marks to students.

Further information on Business School policy and procedure can be found under “Special Consideration” on the key policies and support page.

LATE SUBMISSION PENALTIES

For assessments other than examinations, late submission will incur a penalty of 5% per day or part thereof (including weekends) from the due date and time. An assessment will not be accepted after 5 days (120 hours) of the original deadline unless special consideration has been approved. An assignment is considered late if the requested format, such as hard copy or electronic copy, has not been submitted on time or where the ‘wrong’ assignment has been submitted.

For assessments which account for 10% or less of the overall course grade, and where answers are immediately discussed or debriefed, the LIC may stipulate a different penalty. Details of such late penalties will be available on the course Moodle page.

FEEDBACK ON YOUR ASSESSMENT TASK PERFORMANCE

Feedback on student performance from formative and summative assessment tasks will be provided to students in a timely manner. Assessment tasks completed within the teaching period of a course, other than a final assessment, will be assessed and students provided with feedback, with or without a provisional result, within 10 working days of submission, under normal circumstances. Feedback on continuous assessment tasks (e.g. laboratory and studio-based, workplace-based, weekly quizzes) will be provided prior to the midpoint of the course.

Faculty-specific Information

PROTOCOL FOR VIEWING FINAL EXAM SCRIPTS

UNSW students have the right to view their final exam scripts, subject to a small number of very specific exemptions. The UNSW Business School has set a protocol under which students may view their final exam script. Individual schools within the Faculty may also set up additional local processes for viewing final exam scripts, so it is important that you check with your School.

If you are completing courses from the following schools, please note the additional school-specific information:

- Students in the **School of Accounting, Auditing & Taxation** who wish to view their final examination script should also refer to this page.

- Students in the **School of Banking & Finance** should also refer to this page.
- Students in the **School of Information Systems & Technology Management** should also refer to this page.

COURSE EVALUATION AND DEVELOPMENT

Feedback is regularly sought from students and continual improvements are made based on this feedback. At the end of this course, you will be asked to complete the myExperience survey, which provides a key source of student evaluative feedback. Your input into this quality enhancement process is extremely valuable in assisting us to meet the needs of our students and provide an effective and enriching learning experience. The results of all surveys are carefully considered and do lead to action towards enhancing educational quality.

QUALITY ASSURANCE

The Business School is actively monitoring student learning and quality of the student experience in all its programs. A random selection of completed assessment tasks may be used for quality assurance, such as to determine the extent to which program learning goals are being achieved. The information is required for accreditation purposes, and aggregated findings will be used to inform changes aimed at improving the quality of Business School programs. All material used for such processes will be treated as confidential.

TEACHING TIMES AND LOCATIONS

Please note that teaching times and locations are subject to change. Students are strongly advised to refer to the Class Timetable website for the most up-to-date teaching times and locations.