



# BUSA6004

## Managing Data

Session 2, Special circumstances 2021

*Department of Actuarial Studies and Business Analytics*

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#### **Disclaimer**

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#### **Session 2 Learning and Teaching Update**

The decision has been made to conduct study online for the remainder of Session 2 for all units WITHOUT mandatory on-campus learning activities. Exams for Session 2 will also be online where possible to do so.

This is due to the extension of the lockdown orders and to provide certainty around arrangements for the remainder of Session 2. We hope to return to campus beyond Session 2 as soon as it is safe and appropriate to do so.

Some classes/teaching activities cannot be moved online and must be taught on campus. You should already know if you are in one of these classes/teaching activities and your unit convenor will provide you with more information via iLearn. If you want to confirm, see the list of [units with mandatory on-campus classes/teaching activities](#).

Visit the [MQ COVID-19 information page](#) for more detail.

## General Information

Unit convenor and teaching staff Unit Convenor Chi Truong <a href="mailto:chi.truong@mq.edu.au">chi.truong@mq.edu.au</a>
Credit points 10
Prerequisites Admission to MMgmt
Corequisites
Co-badged status
Unit description This unit provides the quantitative/statistical research tools, data analysis and computer modelling necessary to assist managers with strategic planning, tactical decision-making, and resolving business problems. Students will develop research skills to solve problems.

## 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:** Identify and describe models of managing data.

**ULO2:** Use quantitative research tools to assess the implications of strategic decisions from a whole of entity perspective and across a range of stakeholders.

**ULO3:** Apply a range of research tools and models of business performance and productivity to measure and track sustainable value creation across organisational processes and projects.

## General Assessment Information

Assessment criteria for all assessment tasks will be provided on the unit iLearn site.

It is the responsibility of students to view their marks for each within-session-assessment on iLearn within 20 days of posting. If there are any discrepancies, students must contact the unit

convenor immediately. Failure to do so will mean that queries received after the release of final results regarding assessment tasks (not including the final exam mark) will not be addressed.

### Late submissions of assessments

Sometimes unavoidable circumstances occur that might prevent you from submitting an assessment on time and, in that case, you may be eligible to lodge a [Special Consideration request](#).

Unless a [Special Consideration request](#) has been submitted and approved, please note that no extensions to assessment deadlines will be granted. Assessments that are submitted late will attract a late penalty:

1. There will be a deduction of 10% of the total available marks for each 24 hour period or part thereof that the submission is late.
2. No assessment will be accepted more than 72 hours after the original due date and time (incl. weekends).
3. No late submissions will be accepted for timed assessments (e.g., quizzes, online tests) or for tasks with a weighting of 10% or less.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Online Quizzes</a>	20%	No	Weeks 3,6,9,12
<a href="#">Individual Assignment</a>	20%	No	Week 10
<a href="#">Final Examination</a>	60%	No	University Examination Period

### Online Quizzes

Assessment Type <sup>1</sup>: Quiz/Test

Indicative Time on Task <sup>2</sup>: 15 hours

Due: **Weeks 3,6,9,12**

Weighting: **20%**

There will be 4 online quizzes.

On successful completion you will be able to:

- Identify and describe models of managing data.
- Use quantitative research tools to assess the implications of strategic decisions from a whole of entity perspective and across a range of stakeholders.

- Apply a range of research tools and models of business performance and productivity to measure and track sustainable value creation across organisational processes and projects.

## Individual Assignment

Assessment Type <sup>1</sup>: Quantitative analysis task

Indicative Time on Task <sup>2</sup>: 15 hours

Due: **Week 10**

Weighting: **20%**

Students will be required to complete a quantitative analysis task.

On successful completion you will be able to:

- Identify and describe models of managing data.
- Use quantitative research tools to assess the implications of strategic decisions from a whole of entity perspective and across a range of stakeholders.
- Apply a range of research tools and models of business performance and productivity to measure and track sustainable value creation across organisational processes and projects.

## Final Examination

Assessment Type <sup>1</sup>: Examination

Indicative Time on Task <sup>2</sup>: 20 hours

Due: **University Examination Period**

Weighting: **60%**

An open book two hour online exam will be held during the University Examination Period.

On successful completion you will be able to:

- Identify and describe models of managing data.
- Use quantitative research tools to assess the implications of strategic decisions from a whole of entity perspective and across a range of stakeholders.
- Apply a range of research tools and models of business performance and productivity to measure and track sustainable value creation across organisational processes and projects.

<sup>1</sup> 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.

<sup>2</sup> 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

### Prescribed Textbook

Croucher, John. S. (2018). *Quantitative Analysis for Management*, 6th edition. McGraw-Hill Education. ISBN: 9781760425029

***You should bring this textbook to all lectures as it is also a workbook.***

**Please note:** Students should only attain the 6th edition of this textbook, which is the only edition this class will be taught from. Furthermore, this course relies heavily on the learning material provided in the textbook (which also acts as an exercise book for in-class demonstration and activities). It is highly advised that students attain the required textbook as soon as possible and familiarise themselves with the textbook material, especially before the start of each class session and for sessions with specific allocated chapters (which is made available in the unit schedule below as well as the class iLearn page).

### Where to purchase the textbook?

**McGraw Hill 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 McGraw Hill Education Australia online store at <https://www.mheducation.com.au/quantitative-analysis-for-management-6e-9781760425029-aus>

**Disclaimer: MQBS** does not take responsibility for the stock levels of required textbooks from preferred retail outlets and other book retailers. 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.

### Additional recommended texts

The texts listed below are optional only. It is not compulsory to attain a copy.

- Croucher, John S. (2016). *Introductory mathematics and statistics for business* (6th edition-revised). McGraw-Hill.
- Render, B., Stair, R., Hanna, M.E. and Hale, T.S. (2015). *Quantitative analysis for management*

(12th edition). Pearson.

- Bowerman, B.L., O'Connell, R. and Murphree, E. (2013). *Business statistics in practice* (7th edition). McGraw-Hill

### **Calculator**

A basic calculator with specific keys shown below is required in this unit since it will be used in all class tests and final exam. You may find it useful, but it is not necessary, to have a statistical calculator that has in-built statistical functions. There are several types of these:

- The lowest level statistical calculator has function keys such as the mean and standard deviation but no other statistical function keys.
- The next level above also has function keys for correlation and linear regression. An example is one of the Casio *fx* series such as the 82 or 100 series, but there are many others.

In any case, your calculator should include the following keys:

$x!$  (also known as  $x$  factorial)

$e^x$  or  $ex$  or  $\exp(x)$  (also known as  $e$  to the power  $x$ )

$\ln(x)$  also known as the “natural logarithm of  $x$ ” or as the “logarithm to base  $e$ ”

$nCr$  also known as “ $n$  choose  $r$ ”

You need to bring your calculator to every session class session. You should also bring your laptop computer, equipped with excel.

### **Access to Technology**

Access to a personal computer and internet connection is required to access learning material/ resources online on Macquarie University's online learning management system called iLearn.

Students will also be required to gain access to statistical software called Minitab 16. While the text refers to Minitab 16, version 17 & 18 may be used.

### **iLearn - Your class online learning resources page**

The class iLearn page for this unit is located at: <https://ilearn.mq.edu.au/>. You must be enrolled in this class to see the class iLearn page.

### **Lecture slides**

The lecture slides provided for this class will be minimal. The lectures will mostly be based on the textbook.

### **Allocated supplementary readings**

Students are required to attain the required text listed above and bring to every class session. There may be some supplementary readings (journal articles, case studies etc) set for this class. If so it will be announced on iLearn ahead of the class session in which it may be covered.

## Unit Schedule

Almost all learning material will be based on the required textbook which acts as an exercise workbook, which students are to bring to class in every session along with a calculator or a laptop equipped with excel.

Week	Week beginning	Topics and Chapters
1	26 July	<p>Introduction to statistics - ch 1.1</p> <p>Sampling procedures - ch 1.2 - 1.3</p> <p>Summarising data - ch 1.4 - 1.7</p> <p>Measures of centre - ch 1.8 - 1.14</p> <p>Other statistical measures - ch 1.13 - 1.14, 1.16, 1.18 - 1.19</p> <p>Data analytics - ch 1.20</p>
2	2 August	<p>Measures of variation - ch 2.1 - 2.3, 2.5 - 2.7</p> <p>Using Microsoft Excel - ch 2.9</p> <p>Normal distribution - ch 2.13</p> <p>Areas under the normal curve - ch 2.14 - 2.18</p> <p>Applications - ch 2.19</p>
3	9 August	<p>Estimation - ch 3.1 - 3.3</p> <p>Confidence intervals - ch 3.4 - 3.10</p> <p>Random variables - ch 3.13 - 3.16</p> <p>Factorials, permutations and combinations - ch 3.17 - 3.19</p> <p>Lotto type games - ch 3.20</p>
4	16 August	<p>Correlation - ch 4.1 - 4.8</p> <p>Time series models - ch 4.9 - 4.11</p> <p>Regression models - ch 4.12 - 4.19</p> <p>Exponential smoothing models - ch 4.23 - 4.28</p> <p>Seasonal data - ch 4.29 - 4.30</p> <p>Lag effects - ch 4.31 - 4.33</p>
5	23 August	<p>Categorical data - ch 5.1 - 5.3</p> <p>Single variable data - ch 5.4 - 5.7</p> <p>Contingency tables - ch 5.8 - 5.10</p>
6	30 August	<p>Introduction to hypothesis testing - ch 6.1 - 6.5</p> <p>Power of a test - ch 6.6</p> <p>One-sample tests - ch 6.7 - 6.12</p>

7	6 September	Hypothesis testing & two sample tests - ch 7.1 - 7.5 Sign Test - ch 7.6-7.7 Independent data & two sample tests - ch 7.8-7.15
	<i>Session Break</i>	
8	27 September	Analysis of variance (one-way) - ch 8.1 - 8.3, 8.5 Multiple comparisons - ch 8.8 - 8.9 Analysis of variance (two-way) - ch 8.10 Visual displays - ch 8.13 - 8.19
9	4 October	Odds and probability - ch 9.1 - 9.3 Odds ratios - ch 9.4 Binary logistic regression - Single covariate - ch 9.5 - 9.7 Testing of parameters - ch 9.10 - 9.12 Binary logistic regression - Multiple covariate - ch 9.13
10	11 October	Statistical distributions and probabilities ch 10
11	18 October	Correlation and forecasting ch 14
12	25 October	Gambling business – ch 15
13	1 November	Revision / case studies / sample exam

## 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 \(https://students.mq.edu.au/su\)](https://students.mq.edu.au/su)



[port/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](http://ask.mq.edu.au) or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto: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](http://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](http://ask.mq.edu.au)

If you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto: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/](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.