



# STAT150

## Business Statistics

S3 Day 2019

*Dept of Mathematics and Statistics*

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### Disclaimer

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## General Information

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TBC

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Credit points

3

Prerequisites

Corequisites

Co-badged status

Unit description

Data is the foundation of sound business decisions. In this unit you will learn the fundamentals of analysing, solving and communicating business problems using quantitative information.

The unit will cover the statistical concepts that provide a foundation for the study of and professional practice in business and economics. The focus will be on tools and approaches that are used every day in business. Problems and examples will be drawn from current real-world experience.

## 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:

organise and summarise data graphically and numerically

- use appropriate techniques to analyse data
- use Excel to manipulate and analyse data
- draw conclusions from the results of data analysis
- apply statistical techniques to problems arising from diverse fields of research

## General Assessment Information

All assessments should be attempted and classes attended. Students who have approved absences from one or more practical and/or SGTA classes are still expected to attend at least 8 out of 12 practical classes and at least 8 out of 12 SGTA classes.

The only excuse for missing a SGTA or practical class, an assessment (Class Test 1 or 2) or the final exam is because of documented illness or unavoidable disruption. In these special circumstances you may apply for special consideration via [ask.mq.edu.au](https://ask.mq.edu.au). For approved special considerations for class tests, you will be expected to attend the next available test as determined by the convener.

If a supplementary examination is granted as the result of a special consideration application, the examination will be scheduled after the conclusion of the official examination period.

Note that there is a University policy regarding the special consideration which can be found at: <https://students.mq.edu.au/study/my-study-program/special-consideration/disruption-to-studies>.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Practical Participation</a>	0%	Yes	Daily
<a href="#">SGTA Participation</a>	0%	Yes	Daily
<a href="#">5 Hurdle quizzes</a>	10%	Yes	Day 3, 4, 6, 10 and 12
<a href="#">Class Test 1</a>	15%	No	Day 7 Practical Class
<a href="#">Class Test 2</a>	25%	No	Day 12 Practical Class
<a href="#">Final Examination</a>	50%	No	University Examination Period

### Practical Participation

Due: **Daily**

Weighting: **0%**

**This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)**

Practical participation is a hurdle requirement. Students must participate in at least 8 out of 12

practical classes from day 2 to day 13. Participation will be recorded in class.

On successful completion you will be able to:

- organise and summarise data graphically and numerically
- use appropriate techniques to analyse data
- use Excel to manipulate and analyse data
- apply statistical techniques to problems arising from diverse fields of research

## SGTA Participation

Due: **Daily**

Weighting: **0%**

**This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)**

SGTA participation is a hurdle requirement. Students must participate in at least 8 out of 12 sgat classes from day 2 to day 13. Participation will be recorded in class.

On successful completion you will be able to:

- organise and summarise data graphically and numerically
- use appropriate techniques to analyse data
- draw conclusions from the results of data analysis
- apply statistical techniques to problems arising from diverse fields of research

## 5 Hurdle quizzes

Due: **Day 3, 4, 6, 10 and 12**

Weighting: **10%**

**This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)**

The Hurdle Quizzes are online quizzes that will be made available on iLearn at least two weeks prior to the due dates. Students are allowed an unlimited number of attempts to complete each quiz until the deadline. The required pass mark is indicated on each quiz. Inability to pass a quiz without help indicates that students should visit the Numeracy Centre for help. The highest score obtained will count towards the final grade. Each quiz is worth 2%. Extensions will not be given without an approved [Special Consideration](#) application. **Completion and passing of all Hurdle Quizzes is a hurdle requirement. If you fail to do so, you will fail the unit regardless of other assessment tasks marks.**

This Assessment Task relates to the following Learning Outcomes:

- use appropriate techniques to analyse data
- use Excel to manipulate and analyse data
- draw conclusions from the results of data analysis

- apply statistical techniques to problems arising from diverse fields of research
- demonstrate foundational learning skills including active engagement in their learning process

On successful completion you will be able to:

- organise and summarise data graphically and numerically
- use appropriate techniques to analyse data
- use Excel to manipulate and analyse data
- draw conclusions from the results of data analysis
- apply statistical techniques to problems arising from diverse fields of research

## Class Test 1

Due: **Day 7 Practical Class**

Weighting: **15%**

Class Test 1 will be held in practical classes on day 7. This test must be taken in the practical class in which you are registered. **Students must bring their student ID.** Failure to supply ID will mean exclusion from the test. A standard calculator may be taken into the class test (mobile phones and other devices with calculator apps are not permitted). No other material (apart from writing equipment) will be permitted in the class test. A supplementary class test will be given for students with an approved Special Consideration application.

On successful completion you will be able to:

- organise and summarise data graphically and numerically
- use appropriate techniques to analyse data
- use Excel to manipulate and analyse data
- draw conclusions from the results of data analysis
- apply statistical techniques to problems arising from diverse fields of research

## Class Test 2

Due: **Day 12 Practical Class**

Weighting: **25%**

Class Test 2 will be held in practical classes on day 12. This test must be taken in the practical class in which you are registered. **Students must bring their student ID.** Failure to supply ID will mean exclusion from the test. A standard calculator may be taken into the class test (mobile phones and other devices with calculator apps are not permitted). No other material (apart from writing equipment) will be permitted in the class test. A supplementary class test will be given for students with an approved Special Consideration application.

On successful completion you will be able to:

- organise and summarise data graphically and numerically
- use appropriate techniques to analyse data
- use Excel to manipulate and analyse data
- draw conclusions from the results of data analysis
- apply statistical techniques to problems arising from diverse fields of research

## Final Examination

Due: **University Examination Period**

Weighting: **50%**

The Final Examination will be a two hour written examination (plus ten minutes reading time) and will be held during the examination period which runs from 20th January to 25th January, 2020. A page of formulae will be provided with the final exam. Students will be permitted to take **one A4 sheet (any colour), handwritten on both sides** (using pens and/or pencils and highlighters) into the final examination. This sheet may contain any information deemed useful to the student and must be submitted with the final exam paper at the conclusion of the exam. A standard calculator may also be taken into the final examination (mobile phones and other devices with calculator apps are not permitted for use in the exam). See the day 13 iLearn area for more details on preparing for the final exam.

The University Examination timetable will be available before the commencement of the examinations at: <http://www.timetables.mq.edu.au/>

Students 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 semester, i.e. the final day of the official examination period.

On successful completion you will be able to:

- organise and summarise data graphically and numerically
- use appropriate techniques to analyse data
- use Excel to manipulate and analyse data
- draw conclusions from the results of data analysis
- apply statistical techniques to problems arising from diverse fields of research

## Delivery and Resources

### Classes

Students should register in **and attend** the following classes each teaching day (Monday, Wednesday and Friday of each week):

- 1 x 2 hour lecture beginning on day 1
- 1 x 1 hour SGTA beginning on day 2
- 1 x 1 hour practical beginning on day 2

The timetable for classes can be found on the University web site at: <http://www.timetables.mq.edu.au>

**Day 1 is on Wednesday 4th December 2019.**

Students can change their SGTA and practical classes via eStudent at: <https://student1.mq.edu.au/> space permitting. Students have to attend the classes they are registered in.

## Required and Recommended Texts and/or Materials

- A standard calculator should be brought to all classes.
- Excel 2013 (or a later version) for Microsoft Windows or Excel 2016 for Mac will be used throughout the unit. Students without one of these versions of Excel can download Excel 2016 (or the whole Office suite) from the University. See the University [Wiki page](#) for details. For help, please visit IT help which is located on 17 Wally's Walk (C5C), Room 244, also see other options at <https://students.mq.edu.au/support/technology/service-desk>.
- A standard calculator should be brought to all classes.
- Excel 2013 (or a later version) for Microsoft Windows or Excel 2016 for Mac will be used throughout the unit. Students without one of these versions of Excel can download Excel 2016 (or the whole Office suite) from the University. See the University [Wiki page](#) for details. For help, please visit IT help in Room 244, 17 Wally's Walk (C5C), and also see other options at <https://students.mq.edu.au/support/technology/service-desk>.

Required Text:

- *Business Statistics STAT150: A Custom Edition for Macquarie University* from *Business Statistics 3rd Edition Global Edition* by Sharpe, De Veaux and Velleman (ISBN 9781488616099). This book, with the MyStatLab key, will be used throughout this unit. It can be purchased in hard copy from the Coop Bookshop or directly from Pearson.

## Technology Used and Required

All course material is delivered through iLearn (which is a version of Moodle). The link may be found at <http://ilearn.mq.edu.au>

## Unit Schedule

DAY	DATE	LECTURE TOPIC	Assessments and Revision Quizzes

1	4/12	Introduction to statistics	
2	6/12	Summarising and displaying data	
3	9/12	Summarising and displaying data (continued)	Hurdle quiz 1 submission
4	11/12	Introduction to distributions: the normal distribution	Hurdle quiz 2 submission
	13/12	<b>NO</b> lecture, sgta or practical classes (Time allowed for catching up with your study)	
5	16/12	Sampling distributions and confidence intervals for proportions	
6	18/12	Sampling distributions and confidence intervals for means	Hurdle quiz 3 submission
7	20/12	One sample hypothesis tests for a population mean	Class Test 1
Session Break			
8	6/1	Hypothesis tests for comparing population means	
9	8/1	Simple linear regression (Part 1)	
10	10/1	Simple linear regression (Part 2)	Hurdle quiz 4 submission
11	13/1	Hypothesis tests for population proportions: z-test of a proportion and chi-squared goodness-of fit test	
12	15/1	Chi-squared test of independence	Hurdle quiz 5 submission Class Test 2
13	17/1	Review of STAT150	

## Learning and Teaching Activities

### Lectures

Lectures begin on day 1. Students should attend one 2-hour session each teaching day. Copies of the lecture slides will be made available via iLearn. The lectures are also recorded via 'echo360', and can be accessed on iLearn (under Echo Recordings). Any student who misses a



lecture must work through the Echo recording before he/she will be able to progress to the next lecture.

## SGAT

SGTAs begin on day 2. The first Sgta is mainly for introduction, covering important information about the unit and related. Each sgta from day 2 to day 13 is based on work from the previous day's lecture. The aim of sgta is to practice techniques and understand concepts learned in lectures. SGTAs are designed for students to work together in groups. The emphasis on group work is to explore ideas, devise and ask questions and plan ways to answer them. SGTA material will be made available via iLearn. Exercises on days 3, 5, 7, 9 and 12 will be marked.

## Practicals

Practical classes begin on day 2. Every teaching day throughout the session students will be required to work through practical material that teaches them how to apply the statistical techniques learned during lectures and sgtas by using Excel 13. The daily practical material is based on work from the previous day's lecture. Practical material, and the required Excel datasets, will be made available via iLearn. Students preferring to use their own computers to do the practical work are encouraged to do so.

## Help with STAT150 related administrative matters

For help with STAT150 related administrative matters (such as class enrollment) students should email the convenor.

## Staff consultation (office) hours

Details of staff consultation times are given in this unit guide.

## Numeracy Centre

The Numeracy Centre exists to help students who are experiencing difficulties with numeracy-based subjects such as STAT150. Any student who lacks the knowledge of mathematics needed for STAT150 is encouraged to seek the help of the Centre, which is located in 14 SCOA (E7B) G88. The Centre offers a number of services including individual help, supplementary workshops and an opportunity to meet with other students to discuss problems. STAT150 assumes knowledge of high school mathematics. Anyone without this knowledge should take a mathematics unit prior to enrolling in STAT150. Information about the opening hours of Numeracy Centre during Session 3 will be made available on the unit iLearn page.

## Computing Laboratories

Excel 13 will be used in practical sessions. Computing labs use iLab, so work undertaken must be saved to the iLab desktop and then emailed. Opening hours of computing laboratories during session: 8am - 10pm Mon-Fri 9am - 5pm Sat-Sun For updated computing lab opening hours during session breaks, see the notice boards outside the computing laboratories. Look for additional information on the whiteboards in the labs. Please note that computing labs may be booked for classes. Check the timetable on the door of the lab to make sure that the room is

free.

## 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](https://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](https://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](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.

## Graduate Capabilities

### Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

### Learning outcomes

- organise and summarise data graphically and numerically
- use appropriate techniques to analyse data
- use Excel to manipulate and analyse data
- draw conclusions from the results of data analysis
- apply statistical techniques to problems arising from diverse fields of research

### Assessment tasks

- Practical Participation

- SGTA Participation
- Class Test 1
- Class Test 2
- Final Examination

## Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

### Learning outcomes

- use appropriate techniques to analyse data
- use Excel to manipulate and analyse data
- draw conclusions from the results of data analysis
- apply statistical techniques to problems arising from diverse fields of research

### Assessment tasks

- Practical Participation
- SGTA Participation
- Class Test 1
- Class Test 2
- Final Examination

## Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

### Learning outcomes

- use appropriate techniques to analyse data
- use Excel to manipulate and analyse data
- draw conclusions from the results of data analysis
- apply statistical techniques to problems arising from diverse fields of research

## Assessment tasks

- Practical Participation
- SGTA Participation
- Class Test 1
- Class Test 2
- Final Examination

## Effective Communication

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

## Learning outcomes

- organise and summarise data graphically and numerically
- apply statistical techniques to problems arising from diverse fields of research

## Assessment tasks

- Practical Participation
- SGTA Participation
- Class Test 1
- Class Test 2
- Final Examination

## Changes from Previous Offering

The assessment plan has been aligned to the offerings in session 1 and session 2.