



# STAT1250

## Business Statistics

Session 1, Online-scheduled-weekday 2023

*School of Mathematical and Physical Sciences*

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#### Disclaimer

Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.

## General Information

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Credit points

10

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:

**ULO1:** organise and summarise data graphically and numerically

**ULO2:** use appropriate techniques to analyse data

**ULO3:** use Excel to manipulate and analyse data

**ULO4:** draw conclusions from the results of data analysis

**ULO5:** apply statistical techniques to problems arising from diverse fields of research including examples on sustainability

**ULO6:** demonstrate foundational learning skills including active engagement in your learning process

## General Assessment Information

**Requirements to Pass this Unit:** To pass this unit, you must:

- Attempt all assessments, and
- Achieve a total mark equal to or greater than 50%, and
- Pass all five hurdle quizzes, and
- Participate in a minimum of 10 of the 12 practice-based SGTA and Practicals

### Hurdle Assessments

- Hurdle Quizzes (10%)

Low-stake quizzes serve as a formative assessment, providing a regular opportunity to demonstrate understanding and receive feedback for progress. This unit has five hurdle quizzes, with ten attempts each. You must show your mastery in acquiring statistical knowledge by completing and obtaining the required passing mark for each quiz by its due date and time. This is a hurdle assessment meaning that failure to meet this requirement may result in a **fail** grade for the unit. **Please get in touch with [stat1250.admin@mq.edu.au](mailto:stat1250.admin@mq.edu.au) to request an extension should you miss or fail the quiz.**

- SGTA Practice-based task (0%)

Development of knowledge and skills requires continual practice at authentic problems in a group discussion setting. This unit has weekly SGTA classes and you must demonstrate your progress in developing and communicating knowledge and skills in a minimum of 10 of the 12 classes. This is a hurdle assessment meaning that failure to meet this requirement may result in a **fail** grade for the unit. Students may miss two of the 12 practice-based tasks without any consequences related to hurdle. In other words, they are permitted up to two absences. Students can use up to 4 off-class practice-based quizzes (see iLearn for details of off-class practice-based tasks) to make up for the missed learning opportunities in face-to-face or online SGTAs.

**Additional absences will require Special Consideration to be applied for** (see below).

- Practical Practice-based task (0%)

Development of knowledge and skills requires continual practice at authentic problems in a computer lab setting. This unit has weekly Practicals and you must demonstrate your progress in developing and communicating knowledge and Excel skills in a minimum of 10 of the 12 classes. This is a hurdle assessment meaning that failure to meet this requirement may result in a **fail** grade for the unit. Students can use up to 4 off-class practice-based quizzes (see iLearn for details of off-class practice-based tasks) to make up for the missed learning opportunities in face-to-face or online Practicals. **Additional absences will require Special Consideration to be applied for** (see below).

**Late Assessment Submission Penalty:** Hurdle quizzes and Class tests must be undertaken at the time indicated in the unit guide (See iLearn for individual due dates). Students may apply for Special Consideration if these activities are missed due to illness or misadventure.

Hurdle Quizzes and Class Tests: No, unless Special Consideration is Granted.

**Special Considerations:** The Special Consideration Policy aims to support students who have been impacted by short-term circumstances or events that are serious, unavoidable and significantly disruptive, and which may affect their performance in assessment.

*Weekly practice-based tasks:* To pass the unit, you need to demonstrate ongoing development of skills and application of knowledge in 10 out of 12 of the weekly SGTA and Practicals. If you miss a weekly practical class due to a serious, unavoidable and significant disruption, contact your convenor ASAP as you may be able to attend another class that week. If it is not possible to attend another class, you should still contact your convenor for access to class material to review in your own time. **Note that a Special Consideration should only be applied for if you miss more than two of the weekly SGTA and Practicals.**

*Hurdle Quiz:* If you experience circumstances or events that affect your ability to complete and/or obtain the required passing mark for each quiz by its due date, **please email [stat1250.admin@mq.edu.au](mailto:stat1250.admin@mq.edu.au) and submit a Special Consideration request through [ask.mq.edu.au](mailto:ask.mq.edu.au).**

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#"><u>Class Test 1</u></a>	15%	No	Week 7
<a href="#"><u>Final Exam</u></a>	50%	No	During University Examination Period
<a href="#"><u>Practice Based Skills for practicals classes</u></a>	0%	Yes	Weekly - from 2 to 13
<a href="#"><u>Hurdle Quizzes</u></a>	10%	Yes	5 of them, See iLearn for individual due dates
<a href="#"><u>Practice Based Skills for SGTA classes</u></a>	0%	Yes	Weekly - from 2 to 13
<a href="#"><u>Class Test 2</u></a>	25%	No	Week 11

### Class Test 1

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

Indicative Time on Task <sup>2</sup>: 3 hours

Due: **Week 7**

Weighting: **15%**

Class Test 1 will be held in the first half of the session.

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

## Final Exam

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

Indicative Time on Task <sup>2</sup>: 21 hours

Due: **During University Examination Period**

Weighting: **50%**

Formal invigilated examination testing the learning outcomes of the unit. 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 including examples on sustainability

## Practice Based Skills for practicals classes

Assessment Type <sup>1</sup>: Practice-based task

Indicative Time on Task <sup>2</sup>: 0 hours

Due: **Weekly - from 2 to 13**

Weighting: **0%**

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

Development of knowledge and skills requires continual practice. During Practicals you will practice a range of statistical & computational techniques. To pass this hurdle assessment, you must be able to demonstrate your progress in developing and communicating knowledge and skills in 10 out of 12 Practicals.

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 including examples on sustainability

## Hurdle Quizzes

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

Indicative Time on Task <sup>2</sup>: 10 hours

Due: **5 of them, See iLearn for individual due dates**

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.

On successful completion you will be able to:

- 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 including examples on sustainability
- demonstrate foundational learning skills including active engagement in your learning process

## Practice Based Skills for SGTA classes

Assessment Type <sup>1</sup>: Practice-based task

Indicative Time on Task <sup>2</sup>: 0 hours

Due: **Weekly - from 2 to 13**

Weighting: **0%**

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

Development of knowledge and skills requires continual practice. During SGTAs you will practice a range of statistical techniques. To pass this hurdle assessment, you must be able to demonstrate your progress in developing and communicating knowledge and skills in 10 out of 12 SGTAs.

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 including examples on sustainability

## Class Test 2

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

Indicative Time on Task <sup>2</sup>: 3 hours

Due: **Week 11**

Weighting: **25%**

Class Test 2 will be held in the second half of the session.

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

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<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

### Classes

Students should enrol in the following classes each week:

- 1 x 2-hour lecture beginning in **Week 1** (attend either in-person if enrolled on an in-person scheduled weekday or online if enrolled on an Online-scheduled)
- 1 x 1-hour Small Group Teaching Activity (SGTA) beginning in **Week 2**.
- 1 x 1-hour Practical beginning in **Week 2**.

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

Students can change their SGTA and practical classes online using eStudent at: <https://student1.mq.edu.au/>.

## Methods of Communication

We will communicate with you via your university email or through announcements on iLearn. Queries to convenors can either be placed on the iLearn discussion board or through direct email to [stat1250.admin@mq.edu.au](mailto:stat1250.admin@mq.edu.au).

## COVID Information

For the latest information on the University's response to COVID-19, please refer to the Coronavirus infection page on the Macquarie website: <https://www.mq.edu.au/about/coronavirus-faqs>. Remember to check this page regularly in case the information and requirements change during the semester. If there are any changes to this unit in relation to COVID, these will be communicated via iLearn.

## Technology Used and Required

All unit material is delivered through iLearn. The link may be found at <http://ilearn.mq.edu.au>

## Unit Schedule

Week	Lecture Topic	Assessment Due
1	Introduction to statistics	
2	Summarising and displaying data	
3	Summarising and displaying data (continued)	Hurdle Quiz 1
4	Introduction to distributions: the normal distribution	
5	Sampling distributions and confidence intervals for proportions	Hurdle Quiz 2
6	Sampling distributions and confidence intervals for means	
7	One sample hypothesis tests for a population mean	Hurdle Quiz 3 Class Test 1
<b>Semester Break (not a holiday)</b>		
8	Hypothesis tests for comparing population means	
9	Simple linear regression (Part 1)	
10	Simple linear regression (Part 2)	
11	Hypothesis tests for population proportions: z-test of a proportion and chi-squared goodness-of fit test	Hurdle Quiz 4 Class Test 2
12	Chi-squared test of independence	
13	Revision	Hurdle Quiz 5



## 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](#)
- [Assessment Procedure](#)
- [Complaints Resolution Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

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

To find other policies relating to Teaching and Learning, visit [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au) and use the [search tool](#).

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/admin/other-resources/student-conduct>

## Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit [ask.mq.edu.au](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)

## Academic Integrity

At Macquarie, we believe [academic integrity](#) – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free [online writing and maths support](#), [academic skills development](#) and [wellbeing consultations](#).

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## Student Support

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

## The Writing Centre

[The Writing Centre](#) provides resources to develop your English language proficiency, academic writing, and communication skills.

- [Workshops](#)

- [Chat with a WriteWISE peer writing leader](#)
- [Access StudyWISE](#)
- [Upload an assignment to Studiosity](#)
- [Complete the 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](#)

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## Student Services and Support

Macquarie University offers a range of [Student Support Services](#) including:

- [IT Support](#)
- [Accessibility and disability support](#) with study
- Mental health [support](#)
- [Safety support](#) to respond to bullying, harassment, sexual harassment and sexual assault
- [Social support including information about finances, tenancy and legal issues](#)
- [Student Advocacy](#) provides independent advice on MQ policies, procedures, and processes

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## Student Enquiries

Got a question? Ask us via [AskMQ](#), or contact [Service Connect](#).

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## 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.

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## Changes from Previous Offering

Online offering of the unit is made available in S1 2023.