



STAT6170

Introductory Statistics

Session 2, Online-scheduled-weekday 2026

School of Mathematical and Physical Sciences

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General Information

Unit convenor and teaching staff

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Credit points

10

Prerequisites

Corequisites

Co-badged status

STAT1170 STAX1170

Unit description

This unit provides a broad introduction to statistical concepts and data analysis techniques, providing basic statistical knowledge. The unit dedicates itself to developing an understanding of statistical practice and illustrates this by studying the techniques most commonly employed in the sciences, social sciences, and humanities. Topics covered in this unit include data collection methods, data quality, data summarisation, basic probability, random variables, and statistical models like the normal distribution, followed by sampling distributions and statistical inferences about means and proportions. Also studied are analysis methods relating to comparisons, counted data and relationships, including regression and correlation. Excel is used for handling and analysing data and word processing to report the results.

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 in Excel.

ULO2: Apply basic concepts of probability, random variables and sampling distributions to solve practical problems.

ULO3: Apply appropriate statistical methodologies to answer scientific research

questions.

ULO4: Draw conclusions from results of a statistical analysis and communicate to others.

General Assessment Information

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

1. Attempt all assessment tasks
2. Achieve a total mark equal to or greater than 50%

Participation in learning activities:

We strongly encourage all students to participate actively in all learning activities. Regular engagement is crucial for your success in this unit, as these activities provide opportunities to deepen your understanding of the material, collaborate with peers, and receive valuable feedback from instructors to assist in completing the unit assessments. Your active participation enhances your learning experience and contributes to a vibrant and dynamic learning environment for everyone.

Classes:

Active participation in the weekly self-directed learning activities is essential. Engaging with the online class material and completing the exercises will enhance your chances of success in the unit, as this approach allows you to actively interact with the content and prepare for other assessments.

Late Assessment Submission Penalty

Unless a Special Consideration request has been submitted and approved, a 5% penalty (of the total possible mark of the task) will be applied for each day a written report or presentation assessment is not submitted, up until the 7th day (including weekends). After the 7th day, a grade of '0' will be awarded even if the assessment is submitted. The submission time for all uploaded assessments is **11:55 pm**. A 1-hour grace period will be provided to students who experience technical concerns. For any late submission of time-sensitive tasks, such as scheduled tests/exams, performance assessments/presentations, and/or scheduled practical assessments/labs, please apply for [Special Consideration](#). For example, if the assignment is worth 8 marks (of the entire unit) and your submission is late by 19 hours (or 23 hours 59 minutes 59 seconds), 0.4 marks (5% of 8 marks) will be deducted. If your submission is late by 24 hours (or 47 hours 59 minutes 59 seconds), 0.8 marks (10% of 8 marks) will be deducted, and so on.

Assessments where Late Submissions will be accepted

1. Generative AI Research Poster – YES, Standard Late Penalty applies
2. Excel-based practical test in class – NO, unless Special Consideration is granted
3. Exam – NO, unless Special Consideration is granted

RELEASE:

- o Generative AI Research Poster: To be released no later than 10th August.

Special Considerations:

The Special Consideration Policy aims to support students impacted by short-term circumstances or events that are serious, unavoidable, and significantly disruptive and may affect their performance in assessment. If you experience circumstances or events that affect your ability to complete the assessments in this unit on time, please inform the convenor and submit a Special Consideration request through <https://connect.mq.edu.au/s/>.

Assessment Tasks

Name	Weighting	Hurdle	Due	Groupwork/Individual	Short Extension	AI Approach
Excel based practical test invigilated	40%	No	Week 9	Individual	No	Observed
Final Exam	40%	No	Examination Period	Individual	No	Observed
Generative AI Research Poster	20%	No	23/08/2026	Individual	Yes	Open

Excel based practical test invigilated

Assessment Type ¹: Experiential task

Indicative Time on Task ²: 1 hours

Due: **Week 9**

Weighting: **40%**

Groupwork/Individual: Individual

Short extension ³: No

AI Approach: Observed

During the Excel-based invigilated test, students will demonstrate their practical knowledge by applying statistical techniques to a given dataset.

On successful completion you will be able to:

- Organise and summarise data graphically and numerically in Excel.
- Apply basic concepts of probability, random variables and sampling distributions to solve practical problems.
- Apply appropriate statistical methodologies to answer scientific research questions.

Final Exam

Assessment Type ¹: Examination

Indicative Time on Task ²: 2 hours

Due: **Examination Period**

Weighting: **40%**

Groupwork/Individual: Individual

Short extension ³: No

AI Approach: Observed

You will undertake a final examination during the formal examination period.

On successful completion you will be able to:

- Organise and summarise data graphically and numerically in Excel.
- Apply basic concepts of probability, random variables and sampling distributions to solve practical problems.
- Apply appropriate statistical methodologies to answer scientific research questions.

Generative AI Research Poster

Assessment Type ¹: Creative task

Indicative Time on Task ²: 7 hours

Due: **23/08/2026**

Weighting: **20%**

Groupwork/Individual: Individual

Short extension ³: Yes

AI Approach: Open

Students analyze a dataset and create a research poster summarizing their findings, using AI tools to assist with components like data visualization, summaries, or layout suggestions. The submission includes the poster and a reflection on how AI was used ethically, what aspects they improved manually, and the importance of human oversight in academic work. Assessment Focus: Data communication, creativity, and ethical AI use.

On successful completion you will be able to:

- Organise and summarise data graphically and numerically in Excel.
- Draw conclusions from results of a statistical analysis and communicate to others.

¹ 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
- [Academic Success](#) for academic skills support.

² Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation.

³ An automatic short extension is available for some assessments. Apply through the [Service Connect Portal](#).

Delivery and Resources

Classes

The statistics content is available through pre-recorded resources (classes) from Week 1 to Week 13 (except Week 9 where the test takes place in Practical classes). Students should engage in self-directed learning by working through the following materials each week:

- A 1-hour lecture – recorded **Weeks 1–12**.
- A 1-hour SGTA on the topics of the current or previous lectures – **Weeks 1–13**.
- A 1-hour practical on the topics of the current or previous lectures – **Weeks 1–13**.

Communication

We will communicate with you via your university email or through announcements on iLearn. You can also post queries to convenors on the iLearn discussion board or send them to your lecturers [or stat1170.admin@mq.edu.au] from your university email address.

Assistance

For help with any matters related to this unit, students should contact the appropriate department staff by emailing stat1170.admin@mq.edu.au.

Required and Recommended Texts and/or Materials

- Software:
 - *Excel*, a spreadsheet application from Microsoft's *Office* suite, is used in this unit. Students with Mac or Windows computers can download it from the student portal, which can be accessed from the Student IT services web page: http://students.mq.edu.au/it_services/. Students using other operating systems might find *Google Sheets* or *OpenOffice Calc* a workable alternative.

Recommended textbook for this unit:

- *Modern Statistics: An introduction*, Don McNeil and Jenny Middledorp (ISBN 9781486007011).

Other recommended reading:

- *Introduction to the Practice of Statistics*, Moore, D.S. and McCabe, G. P (W.H. Freeman)
- *Statistics without Tears* by Rowntree (Penguin)
- *Mind on Statistics* by Utts & Heckard (Thomson, 2004)

- *Elementary Statistics* by Johnson & Kuby (Thomson, 2007)
- *Statistics: The Art & Science of Learning from Data* by Agresti & Franklin (Prentice Hall, 2007)
- *The Statistical Sleuth* by Ramsey and Schafer (Duxbury, 2002).

Technology Used and Required

iLearn (a version of Moodle) is used to deliver course material and can be accessed at <http://ilearn.n.mq.edu.au>.

Prizes

The Don McNeil Prize for Introductory Statistics is named in honour of the foundation Professor of Statistics at Macquarie University. The prize is awarded twice per year to the student with the best overall performance in a first-year statistics unit.

Unit Schedule

Unit Schedule

Week	Lecture Topic	Assessment due
1	Data; research questions; graphics	
2	Random Variables; Binomial distribution	
3	Normal distribution	
4	Sampling distributions	GenAI Research Poster
5	Hypothesis tests for population mean	
6	Comparing population means	
7	Power of a hypothesis test	
8	Simple linear regression	
9	Significance of regression	Module 1, 2 & 3 Excel Practical Test invigilated
10	Advanced regression	
11	Categorical data analysis	
12	Categorical data analysis	
13	No lecture	

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 connect.mq.edu.au or if you are a Global MBA student contact 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](#).

Student Support

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

Academic Success

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

- [Ask a Study Coach](#)
- [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](#)

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

Student Enquiries

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

IT Help

For help with University computer systems and technology, visit <https://students.mq.edu.au/support/technology/service-desk>.

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.

Changes from Previous Offering

We value student feedback to be able to continually improve the way we offer our units. As such we encourage students to provide constructive feedback via student surveys, to the teaching staff directly, or via the FSE Student Experience & Feedback link in the iLearn page. Student feedback from the previous offering of this unit was very positive overall, with students pleased with the clarity around assessment requirements and the level of support from teaching staff. As such, no change to the delivery of the unit is planned, however we will continue to strive to improve the level of support and the level of student engagement.

Unit information based on version 2026.03 of the **Handbook**