



# STAX1103

## Introduction to Psychological Design and Statistics

Session 1, Online-scheduled-weekday 2025

*School of Mathematical and Physical Sciences*

### Contents

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<a href="#"><u>General Information</u></a>	2
<a href="#"><u>Learning Outcomes</u></a>	3
<a href="#"><u>General Assessment Information</u></a>	3
<a href="#"><u>Assessment Tasks</u></a>	5
<a href="#"><u>Delivery and Resources</u></a>	7
<a href="#"><u>Unit Schedule</u></a>	8
<a href="#"><u>Policies and Procedures</u></a>	9
<a href="#"><u>Changes from Previous Offering</u></a>	11
<a href="#"><u>OUA Student Information</u></a>	11

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## General Information

### Unit convenor and teaching staff

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School of Mathematical and Physical Sciences

See iLearn for consultation hours.

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Credit points

10

Prerequisites

Corequisites

Co-badged status

Unit description

This unit provides students with an introduction to research design and statistical analysis. In this unit, students will learn about common research methods used in psychology and related disciplines, critically analyse these methods, and be able to conduct their own analyses. Both experimental and non-experimental research methods are covered, as well as a variety of statistical tests, including t-tests, correlation, and chi square analyses.

Students will learn data management techniques and appropriate methods to summarise data, including both numeric and graphical summaries. Students will also gain hands-on experience using the statistical software Stata.

## 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:** Recognise and apply common research designs in psychological science and draw appropriate conclusions consistent with the research design.

**ULO2:** Recognise and apply statistical techniques in psychological science, including both significance testing and effect sizes, and apply these tests appropriately to research designs.

**ULO3:** Conduct statistical tests appropriately, including using statistical software, and draw appropriate conclusions.

**ULO4:** Summarise data, both numerically and graphically, including using statistical software.

**ULO5:** Critically evaluate research, research designs, and statistical testing in psychological science.

**ULO6:** Effectively communicate research findings, both formally and informally.

## General Assessment Information

You will be using the software packages **Stata** throughout the unit including for most assessments and practical classes. Similarly, you will need **Microsoft Word** to complete the report. See how to download Stata and Microsoft Word for **free** in the Delivery and Resources section, below, and in the Required Resources area of the Unit Information block in iLearn.

### Requirements to Pass this Unit:

To pass this unit you must:

- Achieve a total mark equal to or greater than 50%

### Assessment: Skills exercise (10%)

This exercise tests your understanding and practical application of Stata skills learned during lectures, tutorial and practical classes. More information will be available on iLearn.

### Assessment: Research Report (45%)

The report is to be completed individually and will be submitted via the appropriate assignment link on the iLearn page. Read the submission statement carefully before accepting it as there are substantial penalties for making a false declaration. The methods needed to complete the report are discussed extensively in the tutorials.

- Assignment submission is via iLearn. Microsoft Word must be used to create the assignment, a Word .docx file should be used for submission.
- If there are technical obstructions to your submitting online, please email us to let us know well before the deadline.

You may submit as often as required prior to the due date/time. Please note that each submission will completely replace any previous submissions. It is in your interests to make frequent submissions of your partially completed work as insurance against technical or other problems near the submission deadline.

### **Late Assessment Submission Penalty:**

Unless a Special Consideration request has been submitted and approved, a 5% penalty (of the total possible mark) will be applied each day a written 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. Submission time for all written assessments is set at **11:55 pm**. A 1-hour grace period is provided to students who experience a technical concern.

For any late submission of time-sensitive tasks, such as scheduled assessment quizzes/ tests /exams and/or scheduled practical assessments/labs, students need to submit an application for [Special Consideration](#).

In this unit, late submissions will be accepted as follows:

- Report - YES, Standard Late Penalty applies
- Online quiz - NO, timed assessments must be completed by the due date unless Special Consideration is granted.

**Word Count Penalty:** 5% of the possible mark will be deducted per 100 words over the word limit for the assessment task. An additional 99 words beyond the limit can be written without penalty.

### **Assessment: Final Exam (45%)**

#### **Final Exam Policy:**

Students are expected to make themselves available for the final exam, at the date and time set by the University, in line with the Assessment Policy and Procedure. 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, that is, the final day of the official examination period. The only excuse for not sitting an examination at the designated time is because of documented illness or unavoidable disruption. In these special circumstances, you may apply for [Special Consideration](#).

If you receive special consideration for the final exam, a supplementary exam will be scheduled in the interval between the regular exam period and the start of the next session. By making a special consideration application for the final exam you are declaring yourself available for a resit during this supplementary examination period and will not be eligible for a second special consideration approval based on pre-existing commitments. Please ensure you are familiar with

the policy prior to submitting an application. Approved applicants will receive an individual notification one week prior to the exam with the exact date and time of their supplementary examination.

### Special Consideration

**Written Assessment/Skills Assessment:** If you experience circumstances or events that affect your ability to complete the written report or quiz in this unit on time, please inform the convenor and apply for [Special Consideration](#). If you need help or advice please contact us at STAT1103@mq.edu.au.

**Attendance and Participation:** There are weekly set tutorial and practical activities. You should complete these activities in the week that they are set. Your tutor will be available via the discussion forum and email to help with tutorial activities. You can attend one of the weekly zoom practical classes, as detailed in iLearn, to get assistance in completing the practical activities for that week.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Skills exercise</a>	10%	No	13/04/2025
<a href="#">Research Report</a>	45%	No	09/05/2025
<a href="#">Final Examination</a>	45%	No	Exam Period

### Skills exercise

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

Indicative Time on Task <sup>2</sup>: 7 hours

Due: **13/04/2025**

Weighting: **10%**

Online quiz testing practical application of skills.

On successful completion you will be able to:

- Recognise and apply common research designs in psychological science and draw appropriate conclusions consistent with the research design.
- Recognise and apply statistical techniques in psychological science, including both significance testing and effect sizes, and apply these tests appropriately to research designs.
- Conduct statistical tests appropriately, including using statistical software, and draw

appropriate conclusions.

- Summarise data, both numerically and graphically, including using statistical software.
- Critically evaluate research, research designs, and statistical testing in psychological science.
- Effectively communicate research findings, both formally and informally.

## Research Report

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

Indicative Time on Task <sup>2</sup>: 25 hours

Due: **09/05/2025**

Weighting: **45%**

Students will submit a psychology research report in APA format.

On successful completion you will be able to:

- Recognise and apply common research designs in psychological science and draw appropriate conclusions consistent with the research design.
- Recognise and apply statistical techniques in psychological science, including both significance testing and effect sizes, and apply these tests appropriately to research designs.
- Conduct statistical tests appropriately, including using statistical software, and draw appropriate conclusions.
- Summarise data, both numerically and graphically, including using statistical software.
- Critically evaluate research, research designs, and statistical testing in psychological science.
- Effectively communicate research findings, both formally and informally.

## Final Examination

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

Indicative Time on Task <sup>2</sup>: 25 hours

Due: **Exam Period**

Weighting: **45%**

Formal examination testing the learning outcomes of the unit.

On successful completion you will be able to:

- Recognise and apply common research designs in psychological science and draw appropriate conclusions consistent with the research design.
- Recognise and apply statistical techniques in psychological science, including both significance testing and effect sizes, and apply these tests appropriately to research designs.
- Conduct statistical tests appropriately, including using statistical software, and draw appropriate conclusions.
- Summarise data, both numerically and graphically, including using statistical software.
- Critically evaluate research, research designs, and statistical testing in psychological science.
- Effectively communicate research findings, both formally and informally.

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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:

Lectures (beginning in Week 1): Each week, there are approximately 2 hours of pre-recorded lecture videos to watch, made available through the iLearn site. The pre-recorded lectures will be available the weekend before the week commences. Lectures must be watched prior to attending the tutorial and practical activities that same week. There is also a one-hour live online Q&A session every week where students can ask questions about the lecture material. These Q&A sessions will be held via zoom. Access these sessions via the zoom link in each Weekly section of iLearn.

Tutorial activities (beginning in Week 1): Tutorial activities can be found in the relevant weekly area of iLearn. More information is available under Tutorial Information for STAX1103 on iLearn.

Practical classes (beginning in Week 1): Practical activities can be found in the relevant weekly area of iLearn. Students can attend any one-hour practical class per week (see the classes and more information under Practical Information for STAX1103 on iLearn) to obtain assistance with the practical material.

### Resources:

Please see the Required Resources section of iLearn for details of recommended and required texts and other resources. Textbooks can change from one year to another so do not purchase without checking iLearn.

**Technology Used and Required:** All unit material is delivered through iLearn. The link may be found at <http://ilearn.mq.edu.au>. This unit requires use of a laptop or desktop computer so that the statistical package Stata and Microsoft Word can be installed and used; Stata and Microsoft Word (through the Microsoft Office Suite) can be downloaded **for free** from the University [Software Downloads](#) webpage.

**Communication:** We will communicate with you via **announcements on iLearn** and your **university email**. Queries to convenors and your tutors can either be placed on the iLearn discussion board or sent to STAT1103@mq.edu.au from your university email address.

## Unit Schedule

See iLearn for details of assessment delivery and timings. Note that this schedule is subject to change if necessary.

Week	Topic	Assessments
1	Introduction	
2	Research design and analysis; Stata demonstration	
3	Hypothesis testing	
4	Ethics + Measurement	
5	One-sample tests	
6	Non-experimental designs	
7	Experimental designs	Quiz
	<i>Mid-session break</i>	
8	Categorical data analysis	
9	Longitudinal designs	Report
10	Mixed methods	
11	Regression	
12	Best practice in Psychological Science	
13	Putting it all together and conclusions	
	<i>Final examination period</i>	Final Examination



## 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](https://connect.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](#).

## 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.

- [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](#)

## OUA support and policies

For information and administrative processes specific to OUA studies, please see this website: <https://students.mq.edu.au/study/faculties/open-universities-australia>

## 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 [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.

## Changes from Previous Offering

Every semester feedback results in adjustment to content, delivery and/or resources provided in this unit. As such we encourage students to provide constructive feedback via student surveys, to teaching staff directly or via the FSE Student Experience and Feedback link in the iLearn page.

To enable students more time to focus on learning, understanding and reflecting on the content of our unit we have revised the assessment structure as follows. There are now only three assessments: a skills assessment, report and final exam. Although no marks are associated with completion of lecture, tutorial and practical activities, all activities provide you with key content designed to help you understand content and complete the assessments.

## OUA Student Information

For information for current OUA students at Macquarie University, see this website: <https://students.mq.edu.au/study/faculties/open-universities-australia>

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Unit information based on version 2025.03 of the [Handbook](#)