



PSYX3349

Design and Statistics III

Session 2, Online-flexible 2026

School of Psychological Sciences

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General Information

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Credit points

10

Prerequisites

Admission to Bachelor of Psychology (OUA) and 130cp at the 1000 level or above including PSYU/X 2248

Corequisites

Co-badged status

Unit description

This unit builds on and unifies statistical and design topics introduced in previous units, particularly PSYU2248 Design and Statistics II. Topics include: repeated measures and mixed design ANOVA, multiple regression (linear, curvilinear, and logistic); analysis of variance and covariance; and model reduction procedures. The unit also illustrates the links between these different methods through placing them in the context of the Generalized Linear Model; in so doing the unit enhances your understanding of statistical methods and their relationship with research design. Practical classes utilise the Stata statistical package.

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: Demonstrate broad and coherent knowledge of the underlying principles, concepts, and skills relevant to research design and analysis using the Generalized Linear Model, including analysis, critique, and discussion of the principles and methods used to conduct psychological research (Capability 1: Scientist and Scholar).

ULO2: Appropriately and clearly disseminate information about psychological research design, analysis, interpretation, and outcomes (Capability 2: Practitioner).

ULO3: Demonstrate effective application of statistical knowledge and skills, using statistical software, at a foundational level of competency (Capability 2: Practitioner).

ULO4: Demonstrate the capacity to apply design and statistical knowledge and skills in a manner that is adaptive to context and uncertainty (Capability 3: Citizen).

Assessment Tasks

Name	Weighting	Hurdle	Due	Groupwork/Individual	Short Extension	AI Approach
Data Analysis Task	20%	No	14/09/2026	Individual	No	Open AI
Practical Project	40%	No	05/10/2026	Individual	No	Observed
Online invigilated Examination	40%	No	University final exam period	Individual	No	Observed

Data Analysis Task

Assessment Type ¹: Problem-based task

Indicative Time on Task ²: 20 hours

Due: **14/09/2026**

Weighting: **20%**

Groupwork/Individual: Individual

Short extension ³: No

AI Approach: Open AI

You will analyse and report on data to demonstrate the analyses presented in the unit.

On successful completion you will be able to:

- Demonstrate broad and coherent knowledge of the underlying principles, concepts, and skills relevant to research design and analysis using the Generalized Linear Model,

including analysis, critique, and discussion of the principles and methods used to conduct psychological research (Capability 1: Scientist and Scholar).

- Appropriately and clearly disseminate information about psychological research design, analysis, interpretation, and outcomes (Capability 2: Practitioner).
- Demonstrate effective application of statistical knowledge and skills, using statistical software, at a foundational level of competency (Capability 2: Practitioner).

Practical Project

Assessment Type ¹: Practice-based task

Indicative Time on Task ²: 35 hours

Due: **05/10/2026**

Weighting: **40%**

Groupwork/Individual: Individual

Short extension ³: No

AI Approach: Observed

You will complete a practical project requiring data analysis and a written report to address a research question within the context of psychology research.

On successful completion you will be able to:

- Demonstrate broad and coherent knowledge of the underlying principles, concepts, and skills relevant to research design and analysis using the Generalized Linear Model, including analysis, critique, and discussion of the principles and methods used to conduct psychological research (Capability 1: Scientist and Scholar).
- Appropriately and clearly disseminate information about psychological research design, analysis, interpretation, and outcomes (Capability 2: Practitioner).
- Demonstrate effective application of statistical knowledge and skills, using statistical software, at a foundational level of competency (Capability 2: Practitioner).
- Demonstrate the capacity to apply design and statistical knowledge and skills in a manner that is adaptive to context and uncertainty (Capability 3: Citizen).

Online invigilated Examination

Assessment Type ¹: Examination

Indicative Time on Task ²: 38 hours

Due: **University final exam period**

Weighting: **40%**

Groupwork/Individual: Individual

Short extension ³: No

AI Approach: Observed

You will sit the final examination held within the University's formal exam period, in accordance

with relevant requirements.

On successful completion you will be able to:

- Demonstrate broad and coherent knowledge of the underlying principles, concepts, and skills relevant to research design and analysis using the Generalized Linear Model, including analysis, critique, and discussion of the principles and methods used to conduct psychological research (Capability 1: Scientist and Scholar).
- Appropriately and clearly disseminate information about psychological research design, analysis, interpretation, and outcomes (Capability 2: Practitioner).
- Demonstrate effective application of statistical knowledge and skills, using statistical software, at a foundational level of competency (Capability 2: Practitioner).
- Demonstrate the capacity to apply design and statistical knowledge and skills in a manner that is adaptive to context and uncertainty (Capability 3: Citizen).

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

As a student enrolled in this unit, you will engage in a range of face-to-face and online learning activities, including readings, lectures, and tutorials, etc. Details can be found on the iLearn site for this unit.

Recommended Readings

- Agresti, A. (2018). Statistical Methods for the Social Sciences (5thed.). Boston, USA: Pearson.
- Additional weekly readings are available through Leganto on iLearn.

Technology Used

Active participation in the learning activities throughout the unit will require students to have access to a tablet, laptop, or similar device. Students who do not own their own laptop computer may borrow one from the university library.

You are expected to have had prior experience in the use of Stata before coming into PSYU3349, and be able to read raw data files, access pre-existing data files, and retrieve Stata data files. You are also expected to have some knowledge of Stata syntax. You can directly download Stata to your own computer from MQ's website <https://students.mq.edu.au/support/technology/software/stata>, following the instructions closely. If you experience technical issues, contact IT Help <https://students.mq.edu.au/support/technology/service-desk>

Competent use of Stata is required heading into PSYU3349. If you need a refresher on Stata, then this playlist offers a good place to start: https://www.youtube.com/playlist?list=PLN5lskQdgXWnnlVeA_Y0OBGmnw21fvcmlU

Unit Schedule

Week	Reading	Topic
1	Agresti 9 (revision) & 11	Multiple regression
2	Agresti 12.1-12.4	ANOVA by regression I
3	Agresti 12.1-12.4	ANOVA by regression II
4	Agresti 13.1-13.2	ANCOVA
5	Agresti 14.5	Curvilinear relationships
6	Agresti 5.5 & 14.2	Badly behaved data
7	Agresti 14.1 & notes	Model reduction
-	N/A	N/A
8	Agresti 8.1-8.2 & 15.1	Categorical data & logistic regression I
9	Agresti 15.1-15.3	Categorical data & logistic regression II
10	Howell 7.4	Paired t-test & repeated measures
11	Howell 14.1-14.5	Repeated measures I
12	Howell 14.7	Repeated measures II & mixed designs
13	n/a	Review

*Please note that lecture content and schedule are subject to change. Please see iLearn for tutorial schedule.

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.

ARTIFICIAL INTELLIGENCE TOOLS (custom)

Macquarie University recognises that artificial intelligence (AI), especially generative AI, is rapidly reshaping education and the modern workplace. As AI becomes increasingly accessible, the University and your teaching staff are committed to preparing you to use these tools effectively, ethically, and with strong professional judgment. Rather than restricting technology, the

emphasis is on helping you understand when and how AI can be used to enhance productivity, support learning, and reflect real-world professional practice. Across your degree, we will support you to develop the critical thinking, adaptability, and values-based decision-making skills required to navigate evolving AI tools responsibly, including acknowledging their use appropriately. You should always appropriately acknowledge when you have used AI tools within assessment tasks, including which AI tools you have used and how you have used them.

To provide clarity, Macquarie University uses a simple, two-tiered approach to AI in assessment:

- AI Open assessments allow you to fully incorporate AI, reflecting authentic tasks where AI would normally be used in professional settings.
- Observed with AI Optional assessments involve tasks where you either demonstrate essential knowledge without technology or show how you apply AI under supervision.

Across both categories, the goal is to ensure you build foundational knowledge, exercise sound judgment, and engage with AI in ways that uphold ethical, cultural, and university values.

INCLUSION AND DIVERSITY (custom)

Social inclusion at Macquarie University is about giving everyone who has the potential to benefit from higher education the opportunity to study at university, participate in campus life and flourish in their chosen field. The University has made significant moves to promote an equitable, diverse and exciting campus community for the benefit of staff and students. It is your responsibility to contribute towards the development of an inclusive culture and practice in the areas of learning and teaching, research, and service orientation and delivery. As a member of the Macquarie University community, you must not discriminate against or harass others based on their sex, gender, race, marital status, carers' responsibilities, disability, sexual orientation, age, political conviction or religious belief. All staff and students are expected to display appropriate behaviour that is conducive to a healthy learning environment for everyone.

PROFESSIONALISM (custom)

In the Faculty of Medicine, Health and Human Sciences, professionalism is a key capability embedded in all our courses.

As part of developing professionalism, students are expected to attend all small group interactive sessions including clinical, practical, laboratory, work-integrated learning (e.g., PACE placements), and team-based learning activities. Some learning activities are recorded (e.g., face-to-face lectures), however you are encouraged to avoid relying upon such material as they do not recreate the whole learning experience and technical issues can and do occur. As an adult learner, we respect your decision to choose how you engage with your learning, but we would remind you that the learning opportunities we create for you have been done so to enable your success, and that by not engaging you may impact your ability to successfully complete this unit. We equally expect that you show respect for the academic staff who have worked hard to develop meaningful activities and prioritise your learning by communicating with them in advance if you are unable to attend a small group interactive session.

Another dimension of professionalism is having respect for your peers. It is the right of every

student to learn in an environment that is free of disruption and distraction. Please arrive to all learning activities on time, and if you are unavoidably detained, please join the activity as quietly as possible to minimise disruption. Phones and other electronic devices that produce noise and other distractions must be turned off prior to entering class. Where your own device (e.g., laptop) is being used for class-related activities, you are asked to close down all other applications to avoid distraction to you and others. Please treat your fellow students with the utmost respect. If you are uncomfortable participating in any specific activity, please let the relevant academic know.

Unit information based on version 2026.02 of the [Handbook](#)