



# PSYU3349

## Design and Statistics III

Session 1, In person-scheduled-weekday, North Ryde 2025

*School of Psychological Sciences*

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## General Information

Unit convenor and teaching staff

Erik Reichle

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Credit points

10

Prerequisites

50cp in PSY/PSYU/PSYX units at 2000 level including (PSY248 or PSYU2248 or PSYX248 or PSYX2248)

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 adaptative to context and uncertainty (Capability 3: Citizen).

## General Assessment Information

Grade descriptors and other information concerning grading are contained in the [Macquarie University Assessment Policy](#).

All final grades are determined by a grading committee, in accordance with the Macquarie University Assessment Policy, and are not the sole responsibility of the Unit Convenor.

Students will be awarded a final grade and a mark which must correspond to the grade descriptors specified in the [Assessment Procedure](#) (clause 128).

To pass this unit, you must demonstrate sufficient evidence of achievement of the learning outcomes, meet any ungraded requirements, and achieve a final mark of 50 or better.

Further details for each assessment task will be available on iLearn.

## Late Submissions

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 11.55pm. A 1-hour grace period is provided to students who experience a technical concern.

For example:

Number of days (hours) late	Total Possible Marks	Deduction	Raw mark	Final mark
1 day (1-24 hours)	100	5	75	70
2 days (24-48 hours)	100	10	75	65
3 days (48-72 hours)	100	15	75	60
7 days (144-168 hours)	100	35	75	40
>7 days (>168 hours)	100	-	75	0

For any late submissions of time-sensitive tasks, such as scheduled tests/exams, performance assessments/presentations, and/or scheduled practical assessments/labs, students need to submit an application for Special Consideration.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Quiz</a>	20%	No	Week 7
<a href="#">Practical Project</a>	40%	No	Week 8
<a href="#">Final Examination</a>	40%	No	Final exam period

### Quiz

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

Indicative Time on Task <sup>2</sup>: 20 hours

Due: **Week 7**

Weighting: **20%**

Practical quiz requiring data analysis

On successful completion you will be able to:

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- 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 <sup>1</sup>: Quantitative analysis task

Indicative Time on Task <sup>2</sup>: 40 hours

Due: **Week 8**

Weighting: **40%**

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 adaptative to context and uncertainty (Capability 3: Citizen).

## Final Examination

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

Indicative Time on Task <sup>2</sup>: 33 hours

Due: **Final exam period**

Weighting: **40%**

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 adaptative to context and uncertainty (Capability 3: Citizen).

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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

### *In Person Scheduled Attendance Pattern:*

As a student enrolled in this unit, you will engage in a range of face-to-face or online learning activities, including lectures and practicals, etc.

Details can be found on the iLearn site for this unit. Students can enroll in either an on-campus lecture (space permitting) or an online/live-streamed lecture classes. Practical classes all run on campus only. Students should not attend on-campus classes if you are unwell or have any cold and flu-like symptoms. **Both the mid-session exam and the final exam for this unit will be on campus.**

### *Online Scheduled In-Person Attendance Pattern:*

As a student enrolled in this unit, you will engage in a range of online learning activities, including lectures and practicals, etc.

Details can be found on the iLearn site for this unit. Practical classes all run online only, via Zoom. Lectures will run live online at the time and day indicated in the timetable. **Both the mid-session exam and the final exam for this unit will be on campus.**

### Textbook

Agresti, A. (2018). *Statistical Methods for the Social Sciences* (5th ed.). Boston, USA: Pearson.

Additional weekly readings are available through Leganto on iLearn.

### Computing

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 syntax in Stata. 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](https://www.youtube.com/playlist?list=PLN5lSkQdgXWnnlVeA_Y0OBGmnw21fvcmlU)

## Unit Schedule

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

## 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/>

## 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](#)

## 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.

## Inclusion and Diversity

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

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 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.

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