PSYU2248

Design and Statistics II

Session 2, In person-scheduled-weekday, North Ryde 2023

School of Psychological Sciences

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General Information

Unit convenor and teaching staff
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Credit points
10

Prerequisites
((PSYC104 or PSYU1104 or PSYX104 or PSYX1104) and (PSYC105 or PSYU1105 or PSYX105 or PSYX1105)) or ((PSYU1101 or PSYX1101) and (PSYU1102 or PSYX1102) and (STAT1103 or STAX1103))

Corequisites

Co-badged status

Unit description
This is an intermediate statistics unit, which covers both the design and statistical components of experiments common to psychological research. The importance of interpretation based on both the design and statistics components is emphasised, together with concepts of power and sample size requirements for efficient research. Statistical methods covered include: descriptive statistics; one-way and two-way analysis of variance; correlation; and regression and non parametric equivalents of ANOVA. The unit includes instruction on the presentation of statistical results in report format. Practical classes are based on the use of the Stata statistical software.

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: Develop and demonstrate an appreciation of the way statistical techniques are used to support theory in psychology.

ULO2: Perform statistical analyses of experimental and non-experimental designs in psychology.

ULO3: Critically evaluate designs and analyses in experimental and non-experimental psychology.

General Assessment Information

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.

No further submissions will be accepted after the marked assignments are returned and feedback is released to students.

The final exam for this unit will occur on Macquarie University campus. 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. Sitting the final exam is compulsory in order to be eligible to pass the unit. Any student who does not attempt the final exam will be granted a Fail Absent grade.

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 Tasks

Name	Weighting	Hurdle	Due	Groupwork/Individual	Short Extension	AI Approach
Practical exercises	10%	No	Every Sunday from Week 2		No	
Mid-session exam	20%	No	Friday 8 September		No	
Assignment	20%	No	Week 10		No	
Final examination	50%	No	University Exam Period		No	

Practical exercises

Assessment Type [1]: Problem set
Indicative Time on Task [2]: 14 hours
Due: **Every Sunday from Week 2**
Weighting: **10%**
Groupwork/Individual:
Short extension [3]: No
AI Approach:

Completion and submission of weekly practical exercises, requiring analysis using the statistical software STATA.

On successful completion you will be able to:

- Develop and demonstrate an appreciation of the way statistical techniques are used to support theory in psychology.
- Perform statistical analyses of experimental and non-experimental designs in psychology.
- Critically evaluate designs and analyses in experimental and non-experimental

psychology.

Mid-session exam

Assessment Type [1]: Examination
Indicative Time on Task [2]: 22 hours
Due: **Friday 8 September**
Weighting: **20%**
Groupwork/Individual:
Short extension [3]: No
AI Approach:

Online mid-session examination.

On successful completion you will be able to:

- Develop and demonstrate an appreciation of the way statistical techniques are used to support theory in psychology.
- Perform statistical analyses of experimental and non-experimental designs in psychology.
- Critically evaluate designs and analyses in experimental and non-experimental psychology.

Assignment

Assessment Type [1]: Quantitative analysis task
Indicative Time on Task [2]: 25 hours
Due: **Week 10**
Weighting: **20%**
Groupwork/Individual:
Short extension [3]: No
AI Approach:

Students submit an assignment involving use of STATA statistical software, data analysis, interpretation of results, and communication of findings.

On successful completion you will be able to:

- Develop and demonstrate an appreciation of the way statistical techniques are used to support theory in psychology.

- Perform statistical analyses of experimental and non-experimental designs in psychology.
- Critically evaluate designs and analyses in experimental and non-experimental psychology.

Final examination

Assessment Type [1]: Examination
Indicative Time on Task [2]: 25 hours
Due: **University Exam Period**
Weighting: **50%**
Groupwork/Individual:
Short extension [3]: No
AI Approach:

Final examination held within the University's formal exam period, in accordance with relevant requirements.

On successful completion you will be able to:

- Develop and demonstrate an appreciation of the way statistical techniques are used to support theory in psychology.
- Perform statistical analyses of experimental and non-experimental designs in psychology.
- Critically evaluate designs and analyses in experimental and non-experimental psychology.

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[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 or online learning

activities, including lectures and practicals, etc. Details can be found on the iLearn site for this unit.

In person-scheduled-weekday version:

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.

For general information on unit versions, see this website https://students.mq.edu.au/study/enrolling/choosing-units

Online-scheduled-In person assessment version:

Practical classes all run online via zoom. Lectures will run live online at the time and day indicated in the timetable. The final exam for this unit will be on Macquarie University campus.

For general information on unit versions, see this website https://students.mq.edu.au/study/enrolling/choosing-units

Recommended Readings

Howell, D. C. (2016). *Fundamental statistics for the behavioral sciences.* Cengage learning.

Or, Howell, D. C. (2013). *Statistical methods for psychology.* Belmont, CA: Wadsworth Cengage Learning.

Or, Weinberg, S. L. & Abramowitz, S. K. (2020). *Statistics using Stata: An Integrative Approach (2nd ed.)*. New York: Cambridge University Press.

* Please see iLearn before purchasing these texts.

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 will be using the software package **Stata** throughout the unit including for all of the assessments and practical classes. Details on how to access Stata for free can be found on: https://students.mq.edu.au/support/technology/software/stata

Unit Schedule

	Topic/Theme
Week 1	Introduction to the unit + Revision: Psychological Design & Methods
Week 2	Revision: Correlation + Simple Linear Regression I
Week 3	Simple Linear Regression II + Multiple Linear Regression I
Week 4	Multiple Linear Regression II
Week 5	Revision: t-test + One-Way Analysis of Variance (ANOVA) I
Week 6	One-Way Analysis of Variance (ANOVA) II
Week 7	Mid-session Review
Week 8	Factorial ANOVA I
Week 9	Factorial ANOVA II
Week 10	Factorial ANOVA III
Week 11	Non-parametric Tests
Week 12	Power and Loose Ends
Week 13	Final Review

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (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). 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) 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 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/

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 AskMQ, 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/.

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.

Unit information based on version 2023.03 of the Handbook