



PSY 248

Design and Statistics II

S2 Day 2019

Department of Psychology

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General Information

Unit convenor and teaching staff

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By Appointment

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Credit points

3

Prerequisites

STAT122 or STAT170(P) or STAT171 or PSY122(P) or (PSYC104 and PSYC105)

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:

- Appreciate the way statistical techniques are used to support theory in psychology
- Perform analyses of simple and complex experimental designs in psychology
- Critically evaluate designs and analyses in experimental psychology

General Assessment Information

There are 3 forms of assessment for PSY 248: weekly quizzes, two assignments, and two exams. Overall grades for the unit will be determined by adding together marks for each of the assessments described in this guide. See the university policy on grading for more information.

In PSY 248, you are encouraged to form study groups to revise course material and practice using STATA. However, any work you submit for assessment must be your own, including computations and written expression. In recent years we have had a number of problems with students copying other students' work and submitting as their own work. Firstly, we encourage students to discuss their work with each other, and working together can be especially beneficial for statistics. All practical projects are assessed for plagiarism via Turnitin upon submission.

It is in your interest to keep a (hard or electronic) copy of your submitted work. Firstly, to be able to produce the copy if your original goes missing, and, secondly, to be able to produce an unmarked copy in the case of requesting a re-mark. If you request a re-mark, you will need to submit an unmarked copy of your work, which will be marked by a different marker, and you will receive the revised mark which may be either higher or lower than the original mark. If you wish to request a re-mark you will need to collect a Department of Psychology Application for Re-mark form from the Faculty of Human Sciences Student Office in 4 Wallys Walk (C3A) and follow its directions.

Assessment Tasks

Name	Weighting	Hurdle	Due
Weekly Online Quizzes	20%	No	9pm Sundays
Assignment 1	10%	No	9 pm, 15/09/2019 (Week 7)
Exam 1	20%	No	Tutorial Meeting Times: 10 - 12/09/19 (Week 7)
Assignment 2	10%	No	9pm, 08/11/2019 (Week 13)
Final exam	40%	No	University examination period

Weekly Online Quizzes

Due: **9pm Sundays**

Weighting: **20%**

The unit's tutorial program is *vital* for students to have a first-hand understanding of the material and its application in psychology research.

Each week (starting Week 1) there will be a set of practical tasks **to complete before** attempting the quiz and before the next week's Tutorial Meetings. Most weeks this will involve a data analysis task (involving Stata) and an interpretation task, although in some weeks outputs will be provided for interpretation. The requirement to complete an online quiz each week will help ensure that students keep up with the unit material week-by-week. Tutors will then work through the solution during tutorial sessions in the subsequent week. **Solutions to quizzes and practicals will NOT be made available outside of tutorial classes.** Access to STATA is required for these weekly quizzes.

Weekly quizzes will be worth 2% each, for a total of 20% of your final mark.

Quizzes must be completed within iLearn by 9pm on the Sunday prior to the week in which it will be discussed. The iLearn system will not accept submissions after that time and a mark of zero for that week will be recorded if no quiz is submitted on-time without a valid medical certificate or other documented unforeseen circumstances. Each quiz is completed via iLearn and you will receive your mark on completion of the quiz. The tasks must be completed individually by each student.

If there are technical problems associated with iLearn (e.g., error message and then being unable to complete the quiz), make sure you take a screen shot of any error messages that occur. If a screen shot of an error occurring within iLearn is sent to Rachel Kallen before the quiz deadline, *and* it is deemed to be an error occurring that was out of the student's control, *then* a second attempt at the quiz will be granted, as long as the quiz attempt was commenced at least 2 hours before the quiz deadline, and must be completed before the first

tutorial session that reviews that quiz. No second attempts will be granted under any circumstances without evidence of the glitch. Similarly, no second attempts will be granted if you begin your attempt too late and cannot complete the quiz before 9pm Sunday.

It is strongly recommended you complete your quiz well in advance of the 9pm deadline!

In the event of health or other issues that may prevent you from completing the quiz by the 9pm deadline, you may apply for Special Consideration to be exempted from 1 quiz only. If further issues are experienced no further exemptions will be granted and an alternate assessment task will be set for you to replace the missed quiz.

On successful completion you will be able to:

- Appreciate the way statistical techniques are used to support theory in psychology
- Perform analyses of simple and complex experimental designs in psychology

Assignment 1

Due: **9 pm, 15/09/2019 (Week 7)**

Weighting: **10%**

A practical assignment involving use of STATA, data analysis, interpretation of results, and communication of findings.

Details of assignments will be made available approximately four weeks prior to them being due. Marks and feedback will be released to students via iLearn.

This assignment is worth 10% of your overall mark.

This assignment must be submitted online via iLearn/Turnitin. Assignments submitted by post or emailed to tutors/lecturers will not be accepted. Marked assignments will be released via iLearn/Turnitin. Please be sure to proofread your work, as no unattached "addendums" will be accepted. Please also note that iLearn can lag when large numbers of students are uploading documents at the same time. Submission time for assignments will be counted as the time the assessment was received, not the time the uploading began. Because of this, make sure you don't leave your submission to 8:55pm the day it is due! Late penalties will be applied to assignments that are received after the due time, at the rate of 10% mark per day beginning at 9:01 pm on the due date.

All requests for extensions must be made prior to the due date for the assignment. Request for Extensions for Assignments are granted by the Student Centre. Ordinarily, no extensions of time for submission of written work will be granted since ample time for preparation will have been given. If an extension is required for medical or other extenuating circumstances, students may request this in writing through ask.mq.edu.au with supporting documentary evidence (such as medical certificate, counsellor note, or similar). The staff in the Student Centre will make all decisions regarding extensions. Neither individual tutors nor the course convenor will grant extensions. Assignments will not be accepted after marked assignments are returned to students online via iLearn.

Please check your University Handbook of Undergraduate Studies and the Psychology

Department's Policy on plagiarism for the consequences attached to copying others' work and claiming it as your own.

On successful completion you will be able to:

- Appreciate the way statistical techniques are used to support theory in psychology
- Perform analyses of simple and complex experimental designs in psychology
- Critically evaluate designs and analyses in experimental psychology

Exam 1

Due: **Tutorial Meeting Times: 10 - 12/09/19 (Week 7)**

Weighting: **20%**

This exam will cover weeks 2 - 6 (correlation, and GLM: regression and one-way ANOVA). It will be offered during Week 7 Tutorial meetings. If you have a conflict with your assigned tutorial meeting time it is up to you to arrange to attend another tutorial, *only if there is space available*.

The exam will be offered for 50 minutes as an in-class, open book test, worth 20% of your overall mark.

On successful completion you will be able to:

- Appreciate the way statistical techniques are used to support theory in psychology
- Perform analyses of simple and complex experimental designs in psychology
- Critically evaluate designs and analyses in experimental psychology

Assignment 2

Due: **9pm, 08/11/2019 (Week 13)**

Weighting: **10%**

A practical assignment involving use of STATA, data analysis, interpretation of results, and communication of findings.

Details of assignments will be made available approximately four weeks prior to them being due. Marks and feedback will be released to students via iLearn. Please refer to the description of Assignment 1 for more details on submission guidelines.

This assignment is worth 10% of your overall mark.

On successful completion you will be able to:

- Appreciate the way statistical techniques are used to support theory in psychology
- Perform analyses of simple and complex experimental designs in psychology
- Critically evaluate designs and analyses in experimental psychology

Final exam

Due: **University examination period**

Weighting: **40%**

This will be a 2-hour exam conducted during the official university examination period. The exam period for Session 2, 2019 is from 11th November to 29th November, 2019. This exam will assess all new course material that has been covered in PSY248, including lecture content, tutorial content, and required readings.

You will be allowed to take into this exam up to 10 single-sided A4 sheets of summary notes (or 5 double-sided A4 sheets of notes), plus a calculator. These summary notes can be in any format (including hand-written, word processed, photocopied, etc - or a combination). Statistical tables will not be required. Overall the final exam will assess knowledge and understanding through interpretative tasks, and ability to apply knowledge gained to practical problem solving in psychology research. Your understanding of STATA is examinable including use of STATA syntax (commands).

You are expected to present yourself for examination at the time and place designated in the University Examination Timetable. The timetable will be available in Draft form approximately eight weeks before the commencement of the examinations and in Final form approximately four weeks before the commencement of the examinations. http://students.mq.edu.au/student_admin/exams/

The only exception to not sitting an examination at the designated time is because of documented illness or unavoidable disruption. In these circumstances you may wish to consider applying for Special Consideration. Students who experience serious and unavoidable disruption, must apply for special consideration via ask.mq.edu.au. Any enquiries can be lodged online or via a visit to the Student Centre (ground floor, 4 First Walk [C3A])

If a Supplementary Examination is granted as a result of the Special Consideration process, the examination will be scheduled after the conclusion of the official examination period. The format of a supplementary examination is at each unit convener's discretion and is subject to change from the original final examination. Supplementary Exams are only offered to students who have satisfactorily completed all other assessments for the unit and were unable to sit the final exam because of documented illness or unavoidable disruption.

It is the student's responsibility to follow the steps provided via online or in person enquiries. An email will be sent to the student advising them of the outcome of their request for a supplementary exam. Students who are granted to sit for a supplementary exam must make themselves available to sit for the supplementary exam on the specified date. There will only be one time. It is the student's responsibility to email Student Centre to confirm attendance at the supplementary exam.

You are advised that 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, which is the final day of the official examination period.

On successful completion you will be able to:

- Appreciate the way statistical techniques are used to support theory in psychology
- Perform analyses of simple and complex experimental designs in psychology
- Critically evaluate designs and analyses in experimental psychology

Delivery and Resources

Lectures

There are three hours of lecture per week. These lectures will be recorded via Echo360 (which captures the data projector and the lecturer's voice) and will be available on the iLearn page following the lecture.

In-person lecture attendance is not compulsory, but the lectures are considered essential to understanding the unit material so you must either attend in person, listen to the live stream, or access the recordings online. The lectures are recorded using the video Echo system which captures the data projector and the lecturer's voice.

Tutorials

There is a one hour tutorial each week starting in Week 2.

Attendance at tutorials is not compulsory (with the exception of Week 7, Exam 1), but attendance is strongly recommended, as it is the only place answers to the weekly quizzes and worksheets are discussed. Quiz answers will not be available outside of tutorials.

Managing Classes: Official changes to all units can be done on-line via eStudent, including tutorials. Students will be allowed to informally move between tutorial classes, provided there are spare seats after all students enrolled in that class have taken their seats. Please email the tutor of the class you wish to attend for a particular week to check. Please note that if you are enrolled as a full-time student, work commitments need to be structured around your study, not vice versa. Changes of practical times will only be sanctioned where unresolved clashes have occurred and free spaces in a practical class exist.

Technology

Students must have access to STATA, a statistical software package, for this course. STATA can be accessed on University computers (e.g. laptops on loan from the Library), and/or accessed on students' own computer online via iLab. See <https://wiki.mq.edu.au/display/iLab/About> for more information about accessing STATA via iLab.

You will also be expected to access the PSY248 unit Web Page at least weekly for unit notices and information regarding data files etc.

You are expected to have had prior experience in the use of STATA before coming into PSYC105, 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.

Technical Support

If you experience technological difficulties with iLearn or iLab, make sure you take a screenshot of any error messages or difficulties that occur, and contact the university's technical support team via OneHelp. Raise and track requests directly at onehelp.mq.edu.au. Alternatively, you can log an issue by calling the IT HelpDesk on (02) 9850 HELP (4357), email onehelp@mq.edu.au, or visit the IT HelpDesk located at 17 WW 244. Because iLearn and use of Stata are fundamental to PSY248, it is your responsibility to make sure you can access both throughout the semester, especially when needed for weekly quizzes and the assignments. See <http://www.mq.edu.au/onehelp/FAQ.html> for more information.

Required and Additional Readings

Textbook

- Weinberg, S. L. & Abramowitz, S. K. (2016). Statistics using Stata: An Integrative Approach (1st ed.). New York: Cambridge University Press.

Course notes

All slides and course notes will be made available weekly, by topic, on the PSY248 iLearn page.

Additional Statistics References

- Howell, D. C. (2013) (8th ed.) Statistical methods for psychology. Belmont, CA: Wadsworth Cengage Learning.

This is comprehensive introductory to intermediate level text that overlaps to a reasonable level with this course.

Computing References - Please look to iLearn for more STATA resources

As well as the textbook, and course notes, the students who wish for additional material might find the following helpful.

- Mitchell, M. N. (2015). Stata for the Behavioral Sciences. Stata Press.
- Ancock, A. C. (2018). A Gentle Introduction to Stata. Sixth Ed. Stata Press.

Unit Schedule

Proposed lecture schedule (subject to change)

Weeks	Topics	Reading
1 - 2	Introduction to Course Design and Methods in Psychology Revision of Descriptive Statistics Revision of Inferential Statistics up to and including t-tests	W & A, Chapters 1 - 4, 12 <i>Reference</i> (Chapters 9 -11)

2 - 4	Revision of Correlation Introduction to Simple Linear Regression Introduction to Multiple Regression	W&A, Chapters 5-6, 15-16
5-6	Introduction to One-Way ANOVA Contrast testing in One-Way ANOVA	W&A, Chapter 13
7	Introduction to the Analysis of Trend, Power, & Effect Size	**Posted Notes**
8 - 10	Introduction to Factorial Designs & Two-Way ANOVA Contrast testing in Two-Way ANOVA	W&A, Chapter 14
11 - 12	Non-parametric Tests Power	W&A, Chapter 17
13	Summary and Revision	

Learning and Teaching Activities

Tutorial (practical) classes

The names ‘tutorials’ and ‘practicals’ are used interchangeably in this unit. Students should to attend 1 x tutorial class per week. Tutorials commence in Week 2 and continue throughout the semester. The last tutorial is in week 13. Students will be assigned to tutorials via the automated enrolment procedure. EACH TUTORIAL HAS A MAXIMUM LIMIT OF 30 STUDENTS (although some are smaller, depending on the room). This is for both safety and pedagogical reasons. Placing students into practical classes that pleases both students' preferences and the above limitation is a difficult logistical exercise. You are expected to have completed the relevant practical exercise BEFORE attending your tutorial class. These exercises are the same used for the weekly online worksheets and quizzes. Tutors are instructed not to do the practical exercises for you, but rather to discuss your work, resolve difficulties, etc. throughout tutorial classes. Practical exercises for each tutorial class will be available on the unit’s web page.

Lectures

In-person attendance at lectures is not compulsory, though HIGHLY recommended - listening to the lecture online via iLearn is not the same as attending the lecture in person! The size of class and the shape of the lecture theatre mean that stray chatter becomes very distracting for other students - questions to the lecturer are encouraged, but if you wish to pursue a conversation, please leave the lecture theatre. Lectures will be available on Echo360 via iLearn. If you miss a lecture, listening to the recording and looking at the slides should provide an alternative to attendance. If you feel the need to bring a mobile phone with you to lectures, please ensure that it is SWITCHED OFF DURING THE LECTURE.

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). 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](#)
- [Grade Appeal Policy](#)
- [Complaint Management Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#) (**Note:** *The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.*)

Undergraduate students seeking more policy resources can visit the [Student Policy Gateway \(https://students.mq.edu.au/support/study/student-policy-gateway\)](https://students.mq.edu.au/support/study/student-policy-gateway). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit [Policy Central \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/study/getting-started/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

Student Support

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

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

If you are a Global MBA student contact globalmba.support@mq.edu.au

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.

Graduate Capabilities

Capable of Professional and Personal Judgement and Initiative

We want our graduates to have emotional intelligence and sound interpersonal skills and to demonstrate discernment and common sense in their professional and personal judgement. They will exercise initiative as needed. They will be capable of risk assessment, and be able to handle ambiguity and complexity, enabling them to be adaptable in diverse and changing environments.

This graduate capability is supported by:

Learning outcomes

- Appreciate the way statistical techniques are used to support theory in psychology
- Perform analyses of simple and complex experimental designs in psychology

Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

Learning outcomes

- Appreciate the way statistical techniques are used to support theory in psychology
- Perform analyses of simple and complex experimental designs in psychology
- Critically evaluate designs and analyses in experimental psychology

Assessment tasks

- Weekly Online Quizzes
- Assignment 1
- Exam 1
- Assignment 2
- Final exam

Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

Learning outcomes

- Appreciate the way statistical techniques are used to support theory in psychology
- Perform analyses of simple and complex experimental designs in psychology
- Critically evaluate designs and analyses in experimental psychology

Assessment tasks

- Weekly Online Quizzes
- Assignment 1
- Exam 1
- Assignment 2
- Final exam

Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

Learning outcomes

- Appreciate the way statistical techniques are used to support theory in psychology
- Perform analyses of simple and complex experimental designs in psychology
- Critically evaluate designs and analyses in experimental psychology

Assessment tasks

- Weekly Online Quizzes
- Assignment 1
- Exam 1
- Assignment 2
- Final exam

Effective Communication

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

Learning outcome

- Critically evaluate designs and analyses in experimental psychology

Assessment tasks

- Assignment 1
- Exam 1
- Assignment 2

Changes from Previous Offering

Please note practicals, weekly quizzes, assignments, and exams have all been changed from previous offerings. As such, sample or previous exams are not available, nor are they relevant to the content covered in this unit.