PSY 863

Research Design and Evaluation

S1 Day 2019

Department of Psychology

Contents

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General Information

Unit convenor and teaching staff
Unit convenor and lecturer
Prof Mike Jones
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Contact via For personal matters: via iLearn dialogue; Anything to do with content or assessment: via forum
4 First Walk (C3A) 516

Credit points
4

Prerequisites
Admission to MClinPsych or MClinNeuro or MOrgPsych

Corequisites

Co-badged status

Unit description
This unit exposes students to a range of advanced quantitative statistical methods that are useful in research in psychology. The intent of the unit is to explain underlying concepts rather than teach deeper technical detail. Students completing the unit should have an appreciation of when a variety of advanced statistical methods are appropriate, be able to undertake simple analyses, understand how to interpret the results of these analyses and how to assess publications that have used these methods. Content includes a refresher on statistical study design, critical appraisal of published research, common data analysis methods and a number of methods for longitudinal and complex-sampled data, latent variable models as well as meta-analysis.

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:

Design a study and formulate appropriate hypotheses and ways of testing them

Select analytic techniques that are appropriate for the data and which allow valid tests of hypotheses, and research questions to be answered

Reach a basic level of competence in handling Stata commands and procedures

Draw on a selection of quantitative analysis methods/approaches/techniques

Knowledgably apply the specific analytic methods they used in their optional modules

Assessment Tasks

Name	Weighting	Hurdle	Due
Practical project	50%	No	5pm on 17th May
Compulsory topic quizzes	20%	No	5pm Fridays
Final exam	30%	No	9am 5th June

Practical project

Due: **5pm on 17th May**
Weighting: **50%**

Each student selects an elective topic and writes a short report that accounts for 50% of the overall unit grade. Details of the project will be posted separately on iLearn. Reports will be submitted via Grademark (part of iLearn).

On successful completion you will be able to:

- Design a study and formulate appropriate hypotheses and ways of testing them
- Select analytic techniques that are appropriate for the data and which allow valid tests of hypotheses, and research questions to be answered
- Reach a basic level of competence in handling Stata commands and procedures

Compulsory topic quizzes

Due: **5pm Fridays**
Weighting: **20%**

Each of the compulsory topics will be assessed by a short online quiz with one being completed in each of weeks 3-6. The quiz will be comprised of multiple choice, fill-in-the-blank and short answer questions. Each quiz will be available for seven days but once commenced must be completed within one hour. Each quiz accounts for 5% of the unit grade and therefore account for a combined 20% of the unit grade.

Notes:

1. The due date for each quiz is 5pm on the Fridays of weeks 3-6. Each quiz will open at 9am on the Friday one week before its due date.
2. The quiz review session in week 7 (10 April) will not be recorded (although all other

sessions will be recorded).

On successful completion you will be able to:
- Design a study and formulate appropriate hypotheses and ways of testing them
- Select analytic techniques that are appropriate for the data and which allow valid tests of hypotheses, and research questions to be answered
- Reach a basic level of competence in handling Stata commands and procedures
- Draw on a selection of quantitative analysis methods/approaches/techniques

Final exam

Due: **9am 5th June**
Weighting: **30%**

This will be a two-hour multiple choice and short answer style exam and will be held in the lecture slot in week 13. The exam may cover any and all material in the four compulsory modules as well as one of the three elective topics covered during the unit as well as use of Stata and is open book format. The exam will contribute 30% of the overall course grade.

On successful completion you will be able to:
- Select analytic techniques that are appropriate for the data and which allow valid tests of hypotheses, and research questions to be answered
- Draw on a selection of quantitative analysis methods/approaches/techniques
- Knowledgably apply the specific analytic methods they used in their optional modules

Delivery and Resources

Structure of the unit

Every student will study five (5) learning modules in this unit of which four are compulsory topics and the remaining is selected by the student from three (3) available elective modules.

Compulsory modules are selected on the basis of being useful topics for any quantitative research topic, while the student-selected modules allow students to somewhat tailor the unit to their individual needs.

Compulsory modules (all must be undertaken)

1. Design and sample size determination
2. Data manipulation and basic statistical analysis in Stata (although students may use other software if they prefer)
3. Revision of the General Linear model using Stata
4. Dealing with missing values in data

Student-selected modules (select one)

1. Latent variable models
2. Multi-level and Longitudinal models
3. Meta-analysis

Format of the unit

The unit is largely delivered by downloadable video lectures that combine a classical lecture with demonstration of practical application using Stata and are available for download at the start of or early in semester. All compulsory topics do, however, have one-hour face-to-face tutorial sessions at which attendance is strongly recommended but not compulsory. Note that this one session (week 7) will not be recorded to minimise risk of answers being widely disseminated. All elective modules have an associated in-person workshop at which attendance is strongly recommended but also not compulsory. The purpose of the workshops is to provide an opportunity to address unresolved questions prior to the final exam. **Important note**: *To achieve this it will be necessary for each student to have viewed the module video and thought about their project prior to attending the workshop*.

The unit is graded using the standard categories of Fail, Pass, Credit, Distinction and High Distinction. Further details concerning the exam will be provided during the unit. The project report and take home exam will be submitted to the Grademark system that is part of iLearn. You may collaborate in preparatory work for assignments; however, the report submitted must be of your own work. If two or more students are found to have submitted material which is identical, or near to identical, they will be asked to re-submit the material from the affected section or else share the marks with the other student(s) who submitted the same material. NB: Make sure you keep a complete copy of each of your submitted works should it be needed. This unit does not publish previous end-of-semester exam papers due to the assessment format which involves multiple choice questions drawn from a bank of questions which have undergone a process of development and validation to assess a wide range of concepts in this unit. Assessment quality can only be ensured by maintaining the integrity of the question bank rather than creating entirely new questions every year. However a practice exam will be provided via iLearn near the end of semester

Unit Schedule

Week	Workshop date	Workshop content	Assessment
1	27-February	Admin & General Linear Model revision	
2	6-Mar	No class	
3	13-Mar	No class	Quiz 1 due
4	20-Mar	No class	Quiz 2 due
5	27-Mar	Elective topic workshops*	Quiz 3 due

Week	Workshop date	Workshop content	Assessment
6	3-Apr	No class	Quiz 4 due
7	10-Apr	Compulsory topic tutorials*	
	17 & 24 April	Mid-session break	
8	1-May	Project advising**	
9	8-May	No class	
10	15-May	No class	Project reports due
11	22-May	Exam preparation session	
12	39-May	No class	
13	5-June	Final exam (in-class)	Final exam

Note that not all workshops will require the four hours allocated.

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://staff.m
q.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-centr
al). 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 (htt
ps://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 (http s://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/p olicy-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://stu dents.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

PG - Capable of Professional and Personal Judgment and Initiative

Our postgraduates will demonstrate a high standard of discernment and common sense in their professional and personal judgment. They will have the ability to make informed choices and decisions that reflect both the nature of their professional work and their personal perspectives.

This graduate capability is supported by:

Learning outcomes

- Select analytic techniques that are appropriate for the data and which allow valid tests of hypotheses, and research questions to be answered
- Knowledgably apply the specific analytic methods they used in their optional modules

Assessment tasks

- Practical project
- Compulsory topic quizzes
- Final exam

PG - Discipline Knowledge and Skills

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen fields.

This graduate capability is supported by:

Learning outcomes

- Design a study and formulate appropriate hypotheses and ways of testing them
- Select analytic techniques that are appropriate for the data and which allow valid tests of hypotheses, and research questions to be answered
- Reach a basic level of competence in handling Stata commands and procedures
- Draw on a selection of quantitative analysis methods/approaches/techniques
- Knowledgably apply the specific analytic methods they used in their optional modules

Assessment tasks

- Practical project
- Compulsory topic quizzes
- Final exam

PG - Critical, Analytical and Integrative Thinking

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

This graduate capability is supported by:

Learning outcome

- Design a study and formulate appropriate hypotheses and ways of testing them

Assessment tasks

- Practical project
- Final exam

PG - Research and Problem Solving Capability

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

This graduate capability is supported by:

Learning outcomes

- Reach a basic level of competence in handling Stata commands and procedures
- Draw on a selection of quantitative analysis methods/approaches/techniques
- Knowledgably apply the specific analytic methods they used in their optional modules

Assessment task

- Practical project

PG - Effective Communication

Our postgraduates will be able to communicate effectively and convey their views to different social, cultural, and professional audiences. They will be able to use a variety of technologically supported media to communicate with empathy using a range of written, spoken or visual formats.

This graduate capability is supported by:

Assessment task

- Final exam