



UNSW Course Outline

PSYC3371 Multivariate Data Analysis for Psychology - 2024

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General Course Information

Course Code : PSYC3371

Year : 2024

Term : Term 3

Teaching Period : T3

Is a multi-term course? : No

Faculty : Faculty of Science

Academic Unit : School of Psychology

Delivery Mode : In Person

Delivery Format : Standard

Delivery Location : Kensington

Campus : Sydney

Study Level : Undergraduate

Units of Credit : 6

Useful Links

[Handbook Class Timetable](#)

Course Details & Outcomes

Course Description

Much of the research carried out by Honours students in fourth year requires the analysis of multivariate data from experimental and non-experimental designs. This course deals with various forms of multivariate analyses including multiple regression analysis (MRA), which allows

for correlated independent variables, and therefore provides the basis for a general data-analytic system, principal components analysis (PCA) and factor analysis (FA), which make use of correlations to account for the structure of relationships within a set of variables, and multivariate analysis of variance (MANOVA), which extends the application of ANOVA models to multivariate data and within-subjects designs.

The core content of the course will be delivered via lectures and tutorials in a live setting (online or face-to-face), with all supplementary course materials including activities and demonstrations made available online.

Course Aims

The aims of the course are to provide students with an understanding of multiple regression procedures which will allow them to choose analysis strategies appropriate for a range of contexts (prediction, analysing complex experiments and quasi-experiments, and structural modelling). The course aims to provide students with an introductory knowledge of principal components analysis and factor analysis, and their application, as well as an understanding of multivariate analysis of variance methods.

Relationship to Other Courses

PSYC3001 Research Methods 3 is a prerequisite for PSYC3371; PSYC3371 can be thought of as the second half of the "story" covered in PSYC3301 Research Methods 3.

Course Learning Outcomes

| Course Learning Outcomes |
|---|
| CLO1 : Describe, apply and evaluate different research methods used by psychologists. |
| CLO2 : Use statistical packages to calculate statistics relevant to various multivariate analyses. |
| CLO3 : Clearly and comprehensively describe and interpret outcomes of various multivariate analyses. |
| CLO4 : Evaluate the appropriateness and efficiency of various multivariate analyses in observational, quasi-experimental and experimental contexts. |

| Course Learning Outcomes | Assessment Item |
|---|--|
| CLO1 : Describe, apply and evaluate different research methods used by psychologists. | <ul style="list-style-type: none">• Assignment 1• Assignment 2• Final Exam |
| CLO2 : Use statistical packages to calculate statistics relevant to various multivariate analyses. | <ul style="list-style-type: none">• Assignment 1• Assignment 2 |
| CLO3 : Clearly and comprehensively describe and interpret outcomes of various multivariate analyses. | <ul style="list-style-type: none">• Final Exam• Assignment 1• Assignment 2 |
| CLO4 : Evaluate the appropriateness and efficiency of various multivariate analyses in observational, quasi-experimental and experimental contexts. | <ul style="list-style-type: none">• Final Exam |

Learning and Teaching Technologies

Moodle - Learning Management System | Blackboard Collaborate | Echo 360

Learning and Teaching in this course

The methods covered in this course are relevant for the analysis of multivariate data from experimental and non-experimental designs. These methods are often used across the range of sub-disciplines of psychology and as such are relevant for the analysis of data from Honours research projects.

Formal teaching in this course is via live lectures with accompanying lecture slides, and a weekly two-hour live tutorial. It is expected that students have attended the lecture for the relevant topic prior to attending the weekly tutorial. Lecture slides, tutorial materials and related activities for each topic will be posted to Moodle in advance on a regular basis.

In order to keep up with this course, you will need to be on track with lecture material. After

attending each lecture, you should spend some time reviewing your notes and undertaking additional reading where necessary (such as relevant course notes and chapter of the textbook) to ensure that you fully understand the course material for that topic.

Assessments

Assessment Structure

| Assessment Item | Weight | Relevant Dates |
|--|--------|--|
| Assignment 1 Assessment Format: Individual Short Extension: Yes (2 days) | 20% | Start Date: See Assessments Hub on Moodle Due Date: See Assessments Hub on Moodle |
| Assignment 2 Assessment Format: Individual Short Extension: Yes (2 days) | 20% | Start Date: See Assessments Hub on Moodle Due Date: See Assessments Hub on Moodle |
| Final Exam Assessment Format: Individual | 60% | |

Assessment Details

Assignment 1

Assessment Overview

Assignment 1 will assess your understanding of lecture and tutorial material from Topics 1-4 and is typically due in Week 5. The assignment will typically require you to conduct multiple regression analyses as part of answering short answer questions related to the relevant topics. Feedback will be provided via personalized comments in Turnitin as well as a general feedback post on Moodle within 10 working days of submission.

Course Learning Outcomes

- CLO1 : Describe, apply and evaluate different research methods used by psychologists.
- CLO2 : Use statistical packages to calculate statistics relevant to various multivariate analyses.
- CLO3 : Clearly and comprehensively describe and interpret outcomes of various multivariate analyses.

Assessment Length

See Assessments Hub on Moodle

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students do not see Turnitin similarity

reports.

Generative AI Permission Level

Simple Editing Assistance

In completing this assessment, you are permitted to use standard editing and referencing functions in the software you use to complete your assessment. These functions are described below. You must not use any functions that generate or paraphrase passages of text or other media, whether based on your own work or not.

If your Convenor has concerns that your submission contains passages of AI-generated text or media, you may be asked to account for your work. If you are unable to satisfactorily demonstrate your understanding of your submission you may be referred to UNSW Conduct & Integrity Office for investigation for academic misconduct and possible penalties.

For more information on Generative AI and permitted use please see [here](#).

Assignment 2

Assessment Overview

Assignment 2 will assess the understanding of lecture and tutorial material from Topics 8-10 and is typically due in Week 10. The assignment will typically require you to conduct a relevant multivariate analysis, accompanied by a writeup of a detailed account of the analysis. Feedback will be provided via personalized comments in Turnitin as well as a general feedback post on Moodle within 10 working days of submission.

Course Learning Outcomes

- CL01 : Describe, apply and evaluate different research methods used by psychologists.
- CL02 : Use statistical packages to calculate statistics relevant to various multivariate analyses.
- CL03 : Clearly and comprehensively describe and interpret outcomes of various multivariate analyses.

Assessment Length

See Assessments Hub on Moodle

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

Generative AI Permission Level

Simple Editing Assistance

In completing this assessment, you are permitted to use standard editing and referencing functions in the software you use to complete your assessment. These functions are described below. You must not use any functions that generate or paraphrase passages of text or other media, whether based on your own work or not.

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For more information on Generative AI and permitted use please see [here](#).

Final Exam

Assessment Overview

Your understanding of the course material across the entire term will be assessed in the final exam which is worth 60% of the total course mark. The emphasis of the final exam will be on later topics, with the earlier topics, which are assessed early in the term, being treated as assumed knowledge. The exam is typically 2 hours 15 minutes and consists of short answer questions requiring multivariate analyses covered in the course to be carried out and evaluated. The exam will occur during the official university examination period. Feedback is available through inquiry with the course convenor.

Course Learning Outcomes

- CL01 : Describe, apply and evaluate different research methods used by psychologists.
- CL03 : Clearly and comprehensively describe and interpret outcomes of various multivariate analyses.
- CL04 : Evaluate the appropriateness and efficiency of various multivariate analyses in observational, quasi-experimental and experimental contexts.

Assignment submission Turnitin type

Not Applicable

Generative AI Permission Level

No Assistance

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate information or answers.

For more information on Generative AI and permitted use please see [here](#).

General Assessment Information

Special Consideration: Students who experience circumstances outside of their control that prevent them from completing an assessment task by the assigned due date due can apply for Special Consideration. Special Consideration applications should include a medical certificate or other documentation and be submitted via myUNSW within 3 days of the sitting/due date.

Important note: UNSW has a “fit to sit/submit” rule, which means that if you sit an exam or submit a piece of assessment, you are declaring yourself fit to do so and cannot later apply for Special Consideration. This is to ensure that if you feel unwell or are faced with significant circumstances beyond your control that affect your ability to study, you do not sit an examination or submit an assessment that does not reflect your best performance. Instead, you should apply for Special Consideration as soon as you realise you are not well enough or are otherwise unable to sit or submit an assessment.

Once your application has been assessed, you will be contacted via your student email address and advised of the official outcome. If the special consideration application is approved, you may be given an extended due date, or an alternative assessment/supplementary examination may be set. For more information about special consideration, please visit: <https://student.unsw.edu.au/special-consideration>.

Alternative assessments: will be subject to approval and implemented in accordance with UNSW Assessment Implementation Procedure and Psychology Student Guide.

Supplementary examinations: will be made available for students with approved special consideration application and implemented in accordance with UNSW Assessment Policy and Psychology Student Guide.

All course assessments have been designed and implemented in accordance with [UNSW Assessment Policy](#).

The APA (7th edition) referencing style is to be adopted in this course. Students should consult the publication manual itself (rather than third party interpretations of it) in order to properly adhere to APA style conventions. Students do not need to purchase a copy of the manual, it is available in the library or online. This resource is used by assessment markers and should be the only resource used by students to ensure they adopt this style appropriately.

Grading Basis

Standard

Requirements to pass course

A total mark of 50 out of 100 or higher is required to pass the course.

Course Schedule

| Teaching Week/Module | Activity Type | Content |
|--------------------------------------|-----------------|---|
| Week 1 : 9 September - 15 September | Lecture | Topic 1 (Simple Regression) and Topic 2 (Multiple Regression) |
| | Tutorial | Topic 1 (Simple Regression) and Topic 2 (Multiple Regression) |
| Week 2 : 16 September - 22 September | Lecture | Topic 3 (Statistical partialling) and Topic 4 (Prediction via MRA) |
| | Tutorial | Topic 3 (Statistical partialling) and Topic 4 (Prediction via MRA) |
| Week 3 : 23 September - 29 September | Lecture | Topic 5 (One-way ANOVA via MRA) |
| | Tutorial | Topic 5 (One-way ANOVA via MRA) Edit |
| | Online Activity | Video tutorial - Data modification commands |
| Week 4 : 30 September - 6 October | Lecture | Topic 6 (Analysis of covariance via MRA) |
| | Tutorial | Topic 6 (Analysis of covariance via MRA) |
| | Online Activity | Video tutorial - ANCOVA via SPSS |
| Week 5 : 7 October - 13 October | Lecture | Topic 7 (Non-orthogonal factorial ANOVA via MRA), Topic 8 (Factorial designs via MRA with a subject variable) and Topic 9 (Structural equation modelling via MRA) |
| | Tutorial | Topic 7 (Non-orthogonal factorial ANOVA via MRA) |
| | Online Activity | Video tutorial - Introduction to two-way ANOVA via MRA |
| | Online Activity | Video tutorial - Factorial design with a subject variable (Worked example) |
| Week 6 : 14 October - 20 October | Other | Flex Week |
| Week 7 : 21 October - 27 October | Lecture | Topic 9 (Structural equation modelling via MRA) |
| | Tutorial | Topic 9 (Structural equation modelling via MRA) |
| | Online Activity | Video Tutorial - Running a MRA from a correlation matrix |
| Week 8 : 28 October - 3 November | Lecture | Topic 10 (Principal components analysis and factor analysis) |
| | Tutorial | Topic 10 (Principal components analysis) |
| Week 9 : 4 November - 10 November | Lecture | Topic 11 (Multivariate analysis of variance) |
| | Tutorial | Topic 10 (Factor analysis) and Topic 11 (Multivariate analysis of variance) |
| Week 10 : 11 November - 17 November | Lecture | Topic 12 (Post-hoc analysis of data from within-subjects designs) and Course Summary |
| | Tutorial | Topic 11 (Multivariate analysis of variance) |
| | Online Activity | Video tutorial - Analysis of data from a post-hoc between x (within) design |

Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

Course Resources

Prescribed Resources

See "Learning and Teaching". In addition, practice activities and selected worked solutions are

provided on Moodle for each topic. Students are encouraged to work through these activities after the topic has been covered in lectures and tutorials. If you have course related questions you should ask these in the first instance in your tutorial. You may also email your tutor or Dr Li, or post your question to the Discussion forum.

Staff Details

| Position | Name | Email | Location | Phone | Availability | Equitable Learning Services Contact | Primary Contact |
|----------|-------------------|-------|----------|-------|--------------|-------------------------------------|-----------------|
| Convenor | Sonny Li | | | | | No | Yes |
| Lecturer | Kelly Garner | | | | | No | No |
| | Melanie Gleitzman | | | | | No | No |
| Tutor | Marios Panayi | | | | | No | No |

Other Useful Information

Academic Information

Upon your enrolment at UNSW, you share responsibility with us for maintaining a safe, harmonious and tolerant University environment.

You are required to:

- Comply with the University's conditions of enrolment.
- Act responsibly, ethically, safely and with integrity.
- Observe standards of equity and respect in dealing with every member of the UNSW community.
- Engage in lawful behaviour.
- Use and care for University resources in a responsible and appropriate manner.
- Maintain the University's reputation and good standing.

For more information, visit the [UNSW Student Code of Conduct Website](#).

Academic Honesty and Plagiarism

Referencing is a way of acknowledging the sources of information that you use to research your assignments. You need to provide a reference whenever you draw on someone else's words, ideas or research. Not referencing other people's work can constitute plagiarism.

Further information about referencing styles can be located at <https://student.unsw.edu.au/referencing>

Academic integrity is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage. At UNSW, this means that your work must be your own, and others' ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.

Further information about academic integrity, plagiarism and the use of AI in assessments can be located at:

- The [Current Students site](#),
- The [ELISE training site](#), and
- The [Use of AI for assessments](#) site.

The Student Conduct and Integrity Unit provides further resources to assist you to understand your conduct obligations as a student: <https://student.unsw.edu.au/conduct>

Submission of Assessment Tasks

Penalty for Late Submissions

UNSW has a standard late submission penalty of:

- 5% per day,
- for all assessments where a penalty applies,
- capped at five days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and
- no permitted variation.

Any variations to the above will be explicitly stated in the Course Outline for a given course or assessment task.

Students are expected to manage their time to meet deadlines and to request extensions as early as possible before the deadline.

Special Consideration

If circumstances prevent you from attending/completing an assessment task, you must officially apply for special consideration, usually within 3 days of the sitting date/due date. You can apply by logging onto myUNSW and following the link in the My Student Profile Tab. Medical documentation or other documentation explaining your absence must be submitted with your application. Once your application has been assessed, you will be contacted via your student email address to be advised of the official outcome and any actions that need to be taken from there. For more information about special consideration, please visit: <https://>

Important note: UNSW has a “fit to sit/submit” rule, which means that if you sit an exam or submit a piece of assessment, you are declaring yourself fit to do so and cannot later apply for Special Consideration. This is to ensure that if you feel unwell or are faced with significant circumstances beyond your control that affect your ability to study, you do not sit an examination or submit an assessment that does not reflect your best performance. Instead, you should apply for Special Consideration as soon as you realise you are not well enough or are otherwise unable to sit or submit an assessment.

Faculty-specific Information

Additional support for students

- [The Current Students Gateway](#)
- [Student Support](#)
- [Academic Skills and Support](#)
- [Student Wellbeing, Health and Safety](#)
- [Equitable Learning Services](#)
- [UNSW IT Service Centre](#)
- Science EDI Student [Initiatives](#), [Offerings](#) and [Guidelines](#)