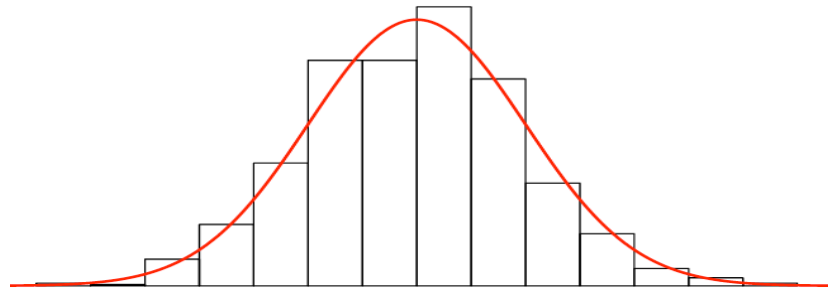




University of
St Andrews



PS5005 Methods of Data Analysis in Psychology

Semester

Semester 2, 2021-2022

Meeting times
(local UK time)

In-person sessions (lectures and workshops) that will be recorded and made available online: Usually Mondays 12-3PM in the Old Library, School of Psychology & Neuroscience. However, for the first three sessions PS5005 will start at 12:30PM (this applies to the sessions on the 17th, 24th and 31st of January). This is due to scheduling conflicts with other modules. Asynchronous online video demonstrations of how to use SPSS will be provided in addition to the in-person workshops.

Optional tutorial sessions on MS Teams (to be arranged)

Dr. Bowman's office hours 11AM-noon & 4-5PM Tuesdays on MS Teams (other times available for individual appointments on request)

Credits

Academic credits: 30

Module summary

The goal of the module is to provide students with advanced, but gentle, training in data analysis and research methods used commonly in psychology. The module is designed to prepare students for understanding and critiquing psychological literature as well as undertaking their own high-quality research.

Prerequisites &
Anti-requisites

Available to students in relevant MSc programmes and auditing PhD students only.

Assessment

Four assignments, each worth 25% of course grade:

Assignment 1 ANOVA due 1 March 4PM in MMS

(note that this is a change from the original deadline of 25 February 2022)

Assignment 2 MR due 18 March 2022 4PM in MMS

Assignment 3 PCA/cluster analysis due 8 April 2022 4PM in MMS

Assignment 4 Logistic Regression due 29 April 2022 4PM in MMS

PS5005 has no examinations.

Staff

Lecturer: Dr. Eric Bowman

Office hours: 11-noon and 4-5PM Tuesdays on MS Teams; one-to-one in-person appointments by arrangement as the situation permits

Office: Room 1.66 School of Psychology & Neuroscience

Phone: +44 (0)1334 462093 outside UK; 01334 462093 within UK

e-mail, Skype & MS Teams: emb@st-andrews.ac.uk

Please put 'PS4071' in the subject line of any e-mail

Tutor: Dr. Mike Oram

Email: mwo@st-andrews.ac.uk

Please note that although PS5005 includes students from both the School of Medicine and the School of Psychology & Neuroscience, it is administered by the latter.

Textbook

Field, A. (2018) Discovering Statistics Using SPSS, 5th Edition. Los Angeles: Sage Publications Ltd. The University's Library link to the book is here: https://encore.st-andrews.ac.uk/iii/encore/record/C_Rb2706548.

Timetable

Week	Day/Month	Activities
1	17/01	Module description Planning data analysis during research design Unit of analysis and pseudoreplication Optional laboratory session: The basics of SPSS Reading: Field, Chapters 1-6 Henrich <i>et al.</i> (2010) <i>Nature</i> 466:29. - http://dx.doi.org/10.1038/466029a
2	24/01	Advanced one-way analysis of variance (ANOVA) Reading: Field, Chapters 10 & 12
3	31/01	Factorial analysis of variance Reading: Field, Chapter 14
4	7/02	Analysis of covariance (ANCOVA) Repeated measures and mixed analysis of variance MANOVA Reading: Field, Chapters 13, 14, 15, 16 & 17
5	14/02	Advanced multiple regression: diagnostic statistics, dummy variables and advanced designs Reading: Field, Chapters 8, 9 & 11
February vacation 21/02 – 25/02		
<i>Assignment 1: ANOVA due 25/02/22 by 4PM in MMS</i>		
6	28/02	Overview of cluster analysis, discriminant analysis, principal component analysis and multidimensional scaling Reading: Field, Chapters 17 (particularly section on discriminant analysis) & 18 Yim & Ramdeen (2015) <i>The Quantitative Methods for Psychology</i> 11: 8-21. https://doi.org/10.20982/tqmp.11.1.p008
7	7/03	Overview of nonparametric analyses Reading: Field, Chapter 7
8	14/03	Meta-analysis Computer-intensive methods Reading for meta-analysis http://www.psychwiki.com/wiki/Meta-analysis Cheung & Vijayakumar (2016) <i>Neuropsychology Review</i> 26:121-128. https://doi.org/10.1007/s11065-016-9319-z <i>Assignment 2: Multiple regression due 18/03/22 by 4PM in MMS</i>
9	21/03	Analysis of clustered or hierarchical data: linear mixed models (TBC)
10	28/03	Structured equation modelling (TBC)
11	4/04	Qualitative approaches in psychology (TBC) <i>Assignment 3: PCA & cluster analysis due 08/04/22 by 4PM in MMS</i>
Revision 11/04 – 22/04		
Exams 25/04 – 10/05		
<i>Assignment 4: Logistic regression due 29/04/22 by 4PM in MMS</i>		

Changes in PS5005 due to COVID-19

As I write this (14 January) the current plan is that PS5005 will be taught in person. We will do our best for any students who are studying remotely or who have to self-isolate by recording lectures, by providing asynchronous videos on how to use SPSS, and having office hours that are reasonable for most time zones. However, if you require any additional assistance, then please contact Dr. Bowman. Also, please bear with us if we are forced to make changes due to the COVID pandemic. Finally, please do follow the guidance about minimising the risks of transmitting COVID that the University and the Scottish government have published.

Attendance

Attendance will be taken for each of the last three sessions in the module because these are given by guest lecturers who volunteer their time. It is impolite not to attend these lectures. All lectures will be recorded in case you are unable to attend, but please make sure you self-certify if you cannot attend a lecture.

Assessment

Coursework

There are 4 assignments for PS5005, each of which is worth 25% of the module grade. The assignments are based on analysing data sets and then presenting the analyses as though they would be presented in a research report. This includes both describing the statistical methods and software, as one would do in a *Data Analysis* subsection in a *Methods* section, and presenting the analyses performed on the data as one would present a *Results* section. Additionally, there will be a brief interpretation of the analyses as one would undertake in a *Discussion* section.

Examination

There are no examinations for PS5005. 😊

Learning Objectives

Students who perform well in this module will:

Demonstrate *knowledge* of:

Research design and planning

Advanced techniques related to analysis of variance and regression
Advanced statistics for use with categorical data
Common multivariate statistics
Avoiding the pitfalls pseudoreplication
The potential of combining qualitative and quantitative approaches
The potential of computer-intensive statistical techniques

Have an *awareness* of:

Meta-analysis of psychological research articles
Computer-intensive techniques that reduce assumptions in statistical analysis
Structured equation modelling
Linear mixed models and their relationship to general linear models

Transferrable Skills

The module will provide you experience in the following practical skills:

The ability to integrate plans for data analysis into research design
The ability to perform and interpret advanced quantitative analyses in SPSS
The ability to assess the quality of analysis in published psychological research
The ability to communicate clearly the pattern of results from a given set of data
The ability to communicate clearly the results of hypothesis-testing

Module-specific requirements

All assignments must be completed and turned in to pass the module.

Assessment regulations

Extensions

To apply for an extension on continuous assessment due to adverse personal circumstances, please fill out the form found at:

https://standrews.eu.qualtrics.com/jfe/form/SV_51NSHXYGMK7BbGS

Late work & late penalties

Academic alerts will be issued for late submissions that are not excused (see

<https://www.st-andrews.ac.uk/media/teaching-and-learning/policies/AcademicAlerts.pdf>).

Late penalties will be applied at the rate of one grade point per day or part thereof that an assignment is late (Policy A of the Penalties for Late Work; see <https://www.st-andrews.ac.uk/media/teaching-and-learning/policies/penalties.pdf>).

Over-length penalties

Over-length penalties will be applied at the rate of 1 mark for work that is over-length to any extent, then a further 1 mark per additional 5% over (Policy C of the Penalties for work of incorrect length). Words will be counted electronically and all aspects including

text boxes will be counted unless otherwise stated. See <https://www.st-andrews.ac.uk/media/teaching-and-learning/policies/penalties.pdf>

Grade descriptors

Mark	Degree equivalent category
16.5-20	Distinction
13.5-16.4	Merit
10.5-13.4	Pass
	Note that the BPS recognition requires an average of 10.5 or above across all modules.
7.0-10.4	Marginal pass
0-6.9	Fail
	Note that mark of 4-6.9 indicates that the work can be submitted for reassessment/resit. The maximum mark for such resubmitted work is capped at 7. A mark of 0-3 indicates that the work cannot be submitted for reassessment/resit.

Inclusive curriculum statement

The School is committed to making its teaching and learning fully inclusive, so that all students are given the opportunity to reach their potential, all students feel like they belong and are not made to feel excluded, and students have the opportunity to contribute to curriculum development. If you have any comments or feedback on this module in terms of the inclusivity of the content, delivery or assessments/feedback, please contact the Module Co-ordinator or, if you would rather provide anonymous feedback, please use the Module Evaluation Questionnaire (MEQ). Alternatively, you can contact your School President or Class Representative, who can raise ideas or issues via the relevant staff-student meetings and consultative committees. If you want to report any instances of bullying, harassment or discrimination that have occurred in teaching and learning environments, you can use the University's [Report & Support](#) tool.

Support contacts

Psychology & Neuroscience Director of Taught Postgraduates (DoPGT)	Eric Bowman – emb@st-andrews.ac.uk
Psychology & Neuroscience Postgraduate Administrator	Helen Sunderland – psyneuopg@st-andrews.ac.uk
Psychology & Neuroscience administrative office for general teaching matters	psych@st-andrews.ac.uk
Psychology & Neuroscience Director of Teaching (DoT)	Paula Miles – psydot@st-andrews.ac.uk

Psychology & Neuroscience Student Wellbeing Officer	Maggie Ellis – psyneuro_wellbeing@st-andrews.ac.uk
Advice & Support Centre (ASC) – welfare and support services	theasc@st-andrews.ac.uk
Centre for Educational Enhancement and Development (CEED) – learning and development support for students	ceed@st-andrews.ac.uk
International Education Institute - English language support	ie@st-andrews.ac.uk