PS125-30 Research and statistical methods for psychology students

26/27

Department
Psychology
Level
Undergraduate Level 1
Module leader
Luke Hodson
Credit value
30
Module duration
24 weeks
Assessment
100% coursework
Study location
University of Warwick main campus, Coventry

Description

Introductory description

This module provides an introduction to the skills and knowledge necessary for psychological investigation and empirical work in psychology, as well as the statistical analysis of psychological research data

Module aims

The module provides skills and knowledge necessary for designing, implementing, analysing, and reporting empirical investigations. This module also provides essential experience for students to conduct their own empirical investigation in the form of a project, as well as experience with both quantitative and qualitative research practice. Finally, this module also provides valuable preparation for the second, and third year projects.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

The module will provide an introduction to research methods in psychology. Topics will include, for example: Scientific writing for psychology: Structure and purpose of an article, the content of title, abstract, introduction, method (and subsections of method), results, discussions and reference section, and citations and referencing formats.
In addition, the module will include:
-Structure and components of experimental and non-experimental research designs.
-Types of data collection techniques.
-Application of statistical hypotheses to research, and selection of statistical tests for analysing data
-Statistical calculation using software (SPSS) of t-tests, chi-square (goodness-of-fit and contingency table) tests, correlation and simple regression, one-way ANOVAs, factorial ANOVAs and repeated-measures ANOVAs, and non-parametric tests.
-Reporting of statistical evidence in scientific reporting for psychology.

The module will also include a review of qualitative research design, with particular focus on the issues faced by researchers in designing qualitative research (i.e., interview schedules, focus group management etc.,), as we as an overview of qualitative data analysis (e.g., content analysis, thematic analysis).

The module will also provide an introduction to more theoretical discussion, implication and issues faced by psychologists conducting research, including discussion of bad science, when statistical are misappropriated and misused, as well as an introduction to alternative perspectives in statistical analyses (i.e., Bayesian analysis). Finally, the module will include a theoretical introduction to advanced research methods via technology (e.g., eye-tracking, driving simulator).

Learning outcomes

By the end of the module, students should be able to:

- The ability to understand, implement and discuss the principles of psychological research
- The ability to understand the principles of experimental, observational, questionnaire, and qualitative research methods
- The ability to understand ethical issues in psychological research
- The ability to understand, demonstrate (including appropriate numeracy and analytic skills), and perform quantitative and qualitative data analysis methods
- The ability to design studies to formulate and test hypotheses, collect analyse and interpret data, and to apply these skills to write reports of empirical investigations that conform to the standard American Psychological Association format

Indicative reading list

Reading lists can be found in Talis

Research element

Students will design and write up sections of a quantitative research report throughout the module. The final assessment on the module is to propose and design a pre-registration for a study.

As a group, conduct a qualitative study. Students will work in groups of 3 to conduct an interview, transcribe an interview, and participate in an interview, and then integrate these scripts into a wider thematic analysis using secondary data. Groups will then present their findings via a presentation.

Subject specific skills

Statistical/analyses skills:
-An ability to present, evaluate and interpret quantitative data the design of factorial experiments, and factorial analysis of variance a familiarity with the basic aspects of the most common research approaches to Psychology, including statistical analyses.
-An ability to conducted, interpret and present qualitative analyses
Research methods skills:
-The formulation and design of appropriate research projects
-Critical analysis, formulation and testing of hypotheses write reports of empirical investigations that conform to the standard American Psychological Association format.
-Research report/ journal article structure
-Referencing conventions
-Understanding of ethical issues in psychological research

Transferable skills

Evaluate the appropriateness of different approaches to solving problems related to their area(s) of study and/or work communicate the results of their study/work accurately and reliably demonstrate techniques for displaying data.
written and oral communication skills.
Use of statistical packages (i.e., SPSS).
Group work.

Study

Study time

Type	Required
Lectures	40 sessions of 1 hour (13%)
Seminars	17 sessions of 1 hour (6%)
Project supervision	3 sessions of 1 hour (1%)
Practical classes	17 sessions of 1 hour (6%)
Other activity	1 hour (0%)
Private study	222 hours (74%)
Total	300 hours

Private study description

Guided private study, including preparation for 2 class tests and assignments and group work on the project (including conducting interviews and transcribing results etc) and presentation preparation

Other activity description

presentations

Costs

No further costs have been identified for this module.

Assessment

You do not need to pass all assessment components to pass the module.

Assessment group A2

	Weighting	Study time	Eligible for self-certification
Assessment component			
Class test 1	15%		No
This test will be based on Moodle. The test will be available within a limited time (e.g., four hours within 24 hours). Assessment will involve statistical analyses, reported via multiple choice or drag/drop style questions on Moodle.			
Reassessment component is the same			
Assessment component			
Class test 2	15%		No
This test will be based on Moodle. The test will be available within a limited time (e.g., four hours within 24 hours). Assessment will involve statistical analyses, reported via multiple choice or drag/drop style questions on Moodle.			

	Weighting	Study time	Eligible for self-certification

Reassessment component is the same

Assessment component

Research experience	5%		No

Participation in research projects

Reassessment component

Alternative research experience task			No

As students will not be able to participate in research, they will be provided with an alternative, related, task

Assessment component

Qualitative analysis presentation	10%		No

Students will be asked to prepare and present a short presentation on their qualitative analysis.

Reassessment component

Qualitative analysis presentation			No

Students will be asked to prepare and present a short presentation on their qualitative analysis.

Assessment component

Practical report one	10%		Yes (extension)

Students will be introduced to a theoretical piece of research, and asked to prepare only the introduction, methods, and reference list.

Reassessment component is the same

	Weighting	Study time	Eligible for self-certification
Assessment component			
Practical report 2	10%		Yes (extension)
Continuing from practical 1, students will be asked to prepare the abstract, results, and discussion of a theoretical report.			
Reassessment component is the same			
Assessment component			
Open Science Report	30%		No
Students will be asked to complete an 'open science' report, akin to that submitted to the Open Science Repository, for a proposed replication of a published piece of research. Students will be required to provide a theoretical justification, hypotheses and/or research questions, a proposed methodology, an a proposed analysis plan, plus any other additional relevant information. 2000 words max. This assessment is core required, and students must pass this assessment in order to pass the module.			
Reassessment component is the same			
Assessment component			
Ethics test	5%		No
Students will be able to complete a multiple choice test based on departmental and British Psychological Society ethical procedures.			
Reassessment component is the same			

Feedback on assessment

Feedback on practical reports and project report takes the form of 1) a printed form giving selected standard comments (corresponding to amount of credit given) on each assessed sub-element of the report (e.g., each student receives seven selected comments about the Abstract of which one could be "The abstract included a clear, accurate, concise statement of the dependent variable." or "The dependent variable was not stated in the abstract" or an alternative about the same topic

would be included); plus 2) additional disambiguating comments from the marker, as needed. Feedback on project presentation takes the form of marks on the department scheme for oral presentations plus written comments from the marker. Other components treated as summative only. Feedback on class tests in the form of correct/incorrect answers.

Availability

Post-requisite modules

If you pass this module, you can take:

- PS225-30 Further Methods for Psychology

Courses

This module is Core for:

- Year 1 of UPSA-C800 Undergraduate Psychology
- Year 1 of UPSA-C804 Undergraduate Psychology with Education Studies
- Year 1 of UPSA-C802 Undergraduate Psychology with Linguistics