

Draft Proposal - Undergraduate Research Methods in Psychology

BSc (Hons) Psychology and Streams, 2024/5 entry

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Proposal for UG Research Methods 2024-5

Goldsmiths as a college bullshit -

Goldsmiths as a department - differentiation, unique properties - Interdisciplinary and methodologically rigorous and creative. Industry links and all that jazz.

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We embrace an Open Science approach in our efforts to cultivate your critical evaluation skills, enhance your understanding of the significance - and power - of research, and equip you with the necessary graduate-level skills to collect, handle, and interpret data using programming software for statistical model development, visualisation and analysis.

Through lectures, interactive group discussions, online skills development modules, and practical lab sessions, we will ignite your enthusiasm for Psychology and Behavioural Science research and help you develop the fundamental skills, knowledge - and confidence - required to become a Psychology literate, disruptive scientist of the future. Tada!

Communicate complex information effectively using appropriate written, oral, graphical and electronic means, taking into account diversity among individuals to whom the information is communicated.

Explain the potential impact of psychological research and theory on a broad range of real world settings and situations (e.g., classrooms, industry, commerce, healthcare, as well as local and global communities).

Problem-solve and reason scientifically. Specifically, graduates will be able to identify and pose research questions, consider alternative approaches to their solutions, and evaluate outcomes.

Be sensitive to contextual and interpersonal factors. Graduates will be familiar with the complexity of the factors that shape behaviour and social interaction which, in turn, will make them more aware of the bases of problems and interpersonal conflicts.

or Be a self-critical learner, showing sensitivity to contextual and interpersonal factors. Graduates will be familiar with the complexity of the factors that shape behaviour and social interaction which, in turn, will make them more aware of the bases of problems and interpersonal conflicts.

Show an understanding of various research paradigms, methods, and evaluation procedures, including statistical analysis, as well as their constraints.

Design, carry out, evaluate and interpret scientifically rigorous and ethically sound studies both independently and collaboratively, utilizing quantitative and qualitative methods, statistical analysis and modern digital software.

Psychological literacy is the ability to understand and apply psychological principles and theories to everyday life. This includes the ability to understand how psychological processes and phenomena influence our behavior, emotions, thoughts, and relationships. It also includes the capacity to use psychological knowledge to make informed decisions and to better understand, explain, and predict the behavior of self and others.

Psychology graduates are highly sought after by employers due to their ability to formulate and communicate well-reasoned, evidence-based, and statistically defensible arguments based on their expertise in the study of human behavior and its causes. On top of this, psychology graduates possess the skills to work independently or collaboratively, as well as strong numerical capabilities, verbal and written communication skills, and an up-to-date knowledge of digital technologies applicable to a wide range of occupational fields.

Intended Learning Outcomes

Create reproducible data analysis scripts and reports within the R statistical programming environment.

QAA Benchmarks

Subject Knowledge and Understanding

6.3.4 demonstrate detailed knowledge of several specialised areas and/or applications, some of which are at the cutting edge of research in the discipline 6.3.5 demonstrate a systematic knowledge of a range of research paradigms, research methods and measurement techniques, including statistics and probability, and be aware of their limitations.

Subject-specific skills

PS510XX - RM1 - Introduction to Research Methods and Data Skills

PS520XX - RM2 - Research Methods in Practice and Data Skills

PS530XX - RM3 - Research Project Incubator

*PS710XX - Practical Research Skills

Lectures - Overview of key concepts/context and preview Lab practicals / Data Skills

Labs - Practical or activity based (inc. Group Work)

Overview of RM Training

Y1 - showcase and active participation/skill development

Y2 - Practical drive towards self-motivated research

Y3 - Competent research

Pedagogical Overview

Social Constructivist

PeerMark

Podcast/Webpage/Blog

Integrate own interest/guided by stream/lab

Technical Overview

R will be used. Gold standard statistical programming language

For literate programming (The concept of “**literate programming**” was originally introduced by Donald Knuth in 1984)

Formerly RStudio. The Interactive Development Environment for use of R.

Hours specification Years 1 & 2

Table 1: Notional Hours

Activity	Time	Note
Lectures	40	2hrs/week
Labs	40	2hrs/week
Data Skills (Online)	40	2hrs/week
Guided Reading/viewing	40	2hrs/week
RPS	20	1hr/week
Independent Study/Coursework	120	6hr/week

Programme Overview

Pre-Arrival onwards / Onboarding

Showcase in Induction week - Staff labs and research projects for the year.

Year One students self-test

MSc Students - ditto and ability to shop around for supervision

Year 2 develop their pods? Show Y1 and Foundations what they did last year

Year 3/MSc students - Research Bootcamp and refreshers/skills workshops

Support PhD students and staff

Shock and Awe - Shatter the A-Level preconceptions

Vertically Integrated Projects via 'Labs'

HeartData week (recruitment & forward prep)

Potentially Reading Week Term 2? Or week before/after?

Allows all levels of students to blitz data and to showcase their work for external stakeholders and to make a department-wide event.

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Personal development skills

- self-management
- team working
- problem solving
- application of information skills
- communication
- application of numeracy skills
- specialist skills

Level 4 - topline summary

Module Content

This module equips students with the practical and conceptual skills necessary for the effective study of psychology. It includes computer skills, presenting results of experiments, structuring an essay, and critiquing a scientific paper. Additionally, it provides an introduction to experimental design, data, and statistics in psychology. Students will learn the theoretical aspects of basic statistical concepts and tests, and gain experience using statistical packages.

Module Learning Outcomes

The student should be able to:

demonstrate a comprehensive understanding of the principles of experimental psychology, from reading and summarizing scientific papers to planning, writing and presenting essays, reports and presentations.

understand the importance and relevance of data analysis, the different types of experiments and tests used.

understand the philosophical underpinnings of qualitative and quantitative approaches to research and evaluate their merits.

demonstrate the skills to analyse and interpret data using qualitative and quantitative frameworks and methods.

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demonstrate statistical proficiency in the ability to use R to compute summary statistics, z-scores, chi-square, binomial tests, and parametric and non-parametric comparison of two means.

be able to visualise and present/communicate research findings to a range of audiences

select and provide a rationale for using a statistical test to analyse a particular dataset, and present the results correctly in both graphical and APA format.

Assessment

Assessment Element	Length	%	F or S	LO Tested
RPS				

Reading and Resource List

We have a custom made textbook to support key study skills throughout your degree:

STUFF

Table 2: Y1 Term 1 Laydown

We ek	Lecture	Practical
P re	Preparing to become a Psychologist	
	<i class	
WW	=“fa-solid fa-file-pdf”> Let’s measure some stuff	
1	Lecture: Lorem Ipsum	Reading: Scarf adghsdbG gdsg as ash ah a ah rdhad fh ad. h j j j asd hasf ha dr hadfj
	Lab: Lorem Ipsum	Data: Snarg
2	Finding patterns and relationships	
3	Correlations and models	
4	Distributions and sampling	
5	Probabilities and P-Values	
RW	--	--
6	Open Science, Reporting and Critique	
7	Qualitative Research	
8	Correlational Research	
9	Q u asi-Experimental Research	
10	Experimental Research	

Term 2		
1	Statistical Models	Reproducibility
2	Inferential Statistics	
3	Alpha, Power, Effect and Sample Size	
4	Correlation	
5	Regression	
RW	--	--
6	Multiple Regression	
7	Logistic Regression	
8	Comparing two means	
9	Comparing several means	
10	Data Skills for Employability	

Y1 Term 2 Laydown

STUFF

		[Sli des] (h ttp%20s : % 20//uoe % 2 0psy.gi % 2 0t%20hu b . io/dap% 2 0 %20r1/2 2 2 3%20/le c % 20tur%2 0 e s/dapR1 % 2 %200_le c 1 _Res%20 e a %20rchD e % 20sign- D % 20a%20t a . html#1)		
Sem. 1: Week 1	R esearch Design & Data		L ab	Read ing
Sem. 1: Week 2	D e s cribing C a t e gorical Data	S l i d e s	L a b	Read ing

STUFF

		[Slides] (http://uoe.psy.gib.tHub.io/dapR1/223/le/tur/20es/dapR1/200_lec1_Res/earchDe%sign-D%20a%20ta.html#1)		
Sem. 1: Week 1	Research Design & Data		Lab	Reading
Sem. 1: Week 3	Describing Continuous Data	[Slides] (http://uoe.psy.gib.tHub.io/dapR1/223/labs/1%20_03_nume ric%20_data.html)	[Lab] (http://uoe.psy.gib.tHub.io/dapR1/223/labs/1%20_03_nume ric%20_data.html)	Reading

STUFF

		[Slides] (https://uepsy.github.io/dapr1/223/lectures/dapR1_lec1_ResearchDesignData_archDesign-sign-D%20a%20ta.html#1)		
Sem. 1: Week 1	Research Design & Data		Lab	Reading
Sem. 1: Week 4	Describing Relationships	[Slides] (https://uepsy.github.io/dapr1/223/lectures/dapR1_lec4_DescribingRelationships.html#1)	[Lab] (https://uepsy.github.io/dapr1/223/lectures/relationships.html)	Reading

STUFF

		[Sli des] (h ttp%20s : % 20//uoe % 2 0psy.gi % 2 0t%20hu b . io/dap% 2 0 %20r1/2 2 2 3%20/le c % 20tur%2 0 e s/dapR1 % 2 %200_le c 1 _Res%20 e a %20rchD e % 20sign- D % 20a%20t a . html#1)	L ab	Read ing
Sem. 1: Week 1	R esearch Design & Data			
Sem. 1: Week 5	F u nctions	Slid e s	[L ab] (http%2 0%20%20 s%20%20 :/%20/% 20uoeps y.%%20% 2020%20 %20gith %20u%20 b.%20io /%20%20 d%20a%2 0pr%2%2 00%201/ 2223/l% 20%20%2 %20%200 abs%20/ %201_05 %20%20 %20fo%2 0%20rma t%20i%2 0%20ve re%20%2 0p%20o% 20%20r% 20t%20_ a.html)	Read ing

STUFF

		[Slides] (https://uoe.psy.gi		
		ot%hub.io/dap%20r1/223%20/lec%20turs/dapR1%2000_lec1_Res%20eas%20rchDe%20sign-D%20a%20ta.html#1)	L ab	Read ing
Sem. 1: Week 1	R esearch Design & Data			
Sem. 1: Week 6	F o r mative f eedback week (A)			
Sem. 1: Week 7	P r o b ability Theory	Slid e s	La b	Read ing
Sem. 1: Week 8	P r o b ability Rules	Slid e s	[L a b] (https://uoe.psy.gi	Read ing
			ot%hub.io/dap%20r1/223/la%20bs%20/1_08%20_prob_%20r%20ule s.html)	

STUFF

		[Slides] (https://uoepsy.github.io/dapr1/223/lecture3/dapR1_lec3_ResearchDesignData_archDiscreteProbabilityDist.html#1)		
Sem. 1: Week 1	Research Design & Data	20a%20t a .html#1)	Lab	Reading
Sem. 1: Week 9	Random Variables (Discrete)	[Slides] (https://uoepsy.github.io/dapr1/223/lecture3/dapR1_lec8_DiscreteProbabilityDist.html#1)	[Lab] (https://uoepsy.github.io/dapr1/223/lecture3/dapR1_lec8_DiscreteProbabilityDist.html)	Reading

STUFF

		[Sli des] (h ttp%20s : % 20//uoe % 2 0psy.gi % 2 0t%20hu b . io/dap% 2 0 %20r1/2 2 2 3%20/le c % 20tur%2 0 e s/dapR1 % 2 %200_le c 1 _Res%20 e a %20rchD e % 20sign- D % 20a%20t a . html#1)	L ab	Read ing
Sem. 1: Week 1	R esearch Design & Data			
Sem. 1: Week 10	Random V a riables (C o n t inuous)	S l ides	[L ab] (https:% % 2020%20 / /uo%20e p s%20y.g % 20i%20t h u%2%200 b .io/dap % 20%2%20 0 r1/%202 2 23/l%20 % 20ab%20 s/ 1_%201 % 200_con %2 0t%20_ % 20d%20i s t.html)	Read ing
Sem. 1: Week 11	S ampling	Slide s	La b	Read ing

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Sem. 2: Week 1	Confidence intervals	Slides	[Lab] (https://uoepsy.github.io/dapr1/2223/labs/2_01_conf_int.html)	Reading
Sem. 2: Week 2	Hypothesis testing: p-values	Slides	Lab	Reading
Sem. 2: Week 3	Hypothesis testing: critical values	[Slides] (https://uoepsy.github.io/dapr1/2223/lectures/dapr1_2_03_h_t_cr_itv_a_lues.pdf)	[Lab] (https://uoepsy.github.io/dapr1/2223/labs/2_03_h_t_crit_values.html)	Reading
Sem. 2: Week 4	Connecting Hypothesis testing and confidence intervals	[Slides] (https://uoepsy.github.io/dapr1/2223/lectures/dapr1_2_04_htci.pdf)	Lab	Reading

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Sem. 2: Week 1	Confidence intervals	Slides	[Lab] (https://uoepsy.github.io/dapr1/2223/labs/2_01_conf_int.html)	Reading
Sem. 2: Week 5	Errors, Power, Effect size, and Assumptions	Slides	[Lab] (http://uoepsy.github.io/dapr1/2223/labs/2_05_error_spower.html)	Reading

0	Course Intro	Intro to R & RStudio
1	Research Design & Data	[Data Types] (http://uoepsy.github.io/dapr1/2122/labs/1_01_data_types.html)
2	Describing Categorical Data	Categorical Data
3	Describing Continuous Data	Numerical Data
4	Describing Relationships	[Relationships] (http://uoepsy.github.io/dapr1/2122/labs/1_04_relationships.html)
5	Functions	Functions
6	– Break Week –	–
7	Intro to Probability	Probability Basics
8	Probability Rules	Probability Rules
9	Discrete Probability Distributions	Discrete Distributions
10	Continuous Probability Distributions	Continuous Distributions
11	Samples and Sampling Distributions	Sampling Distributions

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Semester 2

Week	Lecture	Workbook
1	Confidence Interv als	Confidence Interval s
2	Hypothesis Testing: P-Values	Hypothesis Testing: P-Value s
3	Hypothesis Testing: Critical V alu es	Hypothesis Testing: Critical Va lues
4	[Hypothesis Testing & Confidence Intervals] (h t tps://uoe%20psy.githu b. i o/dapr1/2122/le%20ctu res /dapr1_2_04_htci.pdf)	Hypothesis Testing & Confidence Interva ls
5	[Errors, Power, Effect Size & Assu mptions] (https:%20//uoepsy.git %20hub.io/da%20pr1/212 2 /lectures/%20dap%20r1 _2_05_errorspower.pdf)	Errors, Power, Effect Size & Ass umpt ions
6	- Break Week -	-
7	[One Sample T-test] (https:%20//uoepsy.git %20hub.io/da%20pr1/212 2 /lectures/%20dap%20r1 _lec16_onesamplet.pdf)	One Sample T-tes t
8	Independent Samples T -te st	[Independent T-test] (http%20s://uoepsy%2 0 .github.i%20o/dapr1 /2122/lab%20s/2%20_0 8 _independentt.html)
9	Paired Samples T-te st	[Paired T-test] (h t tps://u%20oepsy.git hu b .io/dapr1/212%202/l ab s /2_09_pairedt.html)
10	Chi-Square Tests	Chi-Square Tes ts
11	Correla tio ns	Covariance & Correl ation

Level 5 - topline summary

Module aims

Experimental designs in psychology typically employ statistical analyses such as analysis of variance, factor analysis and regression. The aim of this module is to make these topics more accessible through the use of practical examples and data collection on a self-directed group research project.

Module Content

The module's overall aim is to offer a supportive and intellectually rigorous environment allowing students to develop highly valuable, transferrable research and collaboration skills in the context of undertaking a group research project.

This module teaches fundamental empirical research techniques within the framework of Open Science and reproducibility, promoting best practice in study design, Open Materials and Data, and methodological practice. This module fully immerses students in the Goldsmiths 'community of practice,' providing structured research support and opportunities to reflect on learning, modelling the key milestones of the final year dissertation.

The module seeks to promote the application of a scientific, intellectually virtuous, research-based approach to any and all future endeavours, and integrates metacognitive and reflective practices to deliver this transformative learning towards academic and personal development.

Over the course of two terms students will follow a programme of lectures introducing a critical approach to psychological research, as well as how such skills can be transferred beyond psychology; across academic disciplines and into the everyday world, with extensive use of case studies and problem-based learning.

Structured weekly labs will enable students to work collaboratively to identify an area of research, critically evaluate current research in the area, and develop a modest research project building on these insights.

Students will work together, alongside lab tutors and researchers in the department, to design and deliver the research project, including obtaining ethical approval, data collection and analysis, then interpreting and writing up the results, and sharing the materials and data in line with Open Science best practices in the Psychological, Behavioural and Data Sciences.

Module Learning Outcomes

1. Show a critical understanding of research design and methodology
2. Design, conduct, analyse, interpret and disseminate a psychological research project
3. Understand the conceptual and historical issues concerned with psychology as a science and area of practical application

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4. Demonstrate valuable time-management and collaborative project-management skills and proficiencies
5. Reflect on their own learning, skill development and metacognition, preparing them for the final year dissertation
6. be able to use R to analyse: regression, correlations, reliability and validity, effect sizes, one-way within and between subjects designs (and post-hocs), two-way within, between and mixed designs; and factor analysis
7. Be able to present reproducible, APA format literate-programmed research reports.

Assessment

Assessment Element	Length	%	F or S	LO Tested
RPS				

Reading and Resource List

We have a custom made textbook to support key study skills throughout your degree:

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Semester 1

Week	Lecture	Workbook
1	[Preliminaries] (https://uoepsy.github.io/2020dapr2/2122/lectures/20dapr2_01_Prelims.html) Functions & Models	[Functions & Models] (https://uoepsy.github.io/dapr2/20201220/1%20abs/1_01_models.html)
2	[Linear Model Intro] (https://uoepsy.github.io/2020dapr2/2122/lectures/20dapr2_03_LMintro.html) Linear Model Coefficients	Simple Linear Regression
3	[Model Evaluation] (https://uoepsy.github.io/dapr2/2122/lectures/d%20apr%202_%2005_LMmodeleval.html) Standardized Coefficients [Binary Predictors] (https://uoepsy.github.io/2020dapr2/2122/lectures/20dapr2_07_LMBinary.html)	Model Fit
4	[Multiple Predictors] (https://uoepsy.github.io/dapr2/2122/lectures/d%20apr%202_%2008_LM_multiple.html) Categorical Predictors with >2 Levels	Multiple Linear Regression
5	Interactions (Continuous * Categorical)	[Interactions I] (https://uoepsy.github.io/dapr2/20201220/1%20abs/1_05_int_nc.html)
6	– Break Week –	–
7	Interactions (Continuous * Continuous)	[Interactions II] (https://uoepsy.github.io/dapr2/20201220/1%20abs/1_07_int_nn.html)

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Week	Lecture	Workbook
8	Interactions (Categorical * Categorical)	[Interactions III] (https://uoepsy.github.io/dapr2/20122/120abs/1_08_int_cc.html)
9	[Assumptions] (https://uoepsy.github.io/dapr2/2122/20lectures/d20apr202_2012_assumptions.html) Diagnostics I [Diagnostics II] (https://uoepsy.github.io/dapr2/2122/20lectures/d20apr202_2013_diagnostics2.html)	Assumptions & Diagnostics
10	Bootstrap Theory	Bootstrapping Regression
11	Bootstrap for Regression – No Lecture –	Writing Up

Semester 2

Week	Lecture	Workbook
1	Model Comparison	[Model Comparison] (https://uoepsy.github.io/dapr2/2122/20labs/2_01_model_comp.html)
2	Coding Categorical Predictors	Coding Categorical Predictors
3	Experimental Designs	Contrasts, Study Design & Factorial ANOVA
4	Factorial Designs	Two-Way ANOVA
5	Multiple Comparison & Assumptions	Assumptions, Multiple Comparisons, Corrections & Writing up
6	– Break Week –	–
7	Binary Logistic Regression I Binary Logistic Regression I	[Logistic Regression] (https://uoepsy.github.io/dapr2/20122/120abs/2_07_binary.html)

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Week	Lecture	Workbook
8	Intro to the Generalised Linear Model (GLM)	More Logistic Regression
9	Intro to Missing Data Exploratory vs Confirmatory Analysis	Exploratory vs Confirmatory Analysis
10	Power for Linear Models	Power for Linear Models
11	Reproducibility, Open Science & Preregistration	Recap

Table 11: Y2 Term 1 Laydown

Week	Lecture	Practical
Pre	Preparing to become a Psychologist	
WW	Let's measure some stuff	
1	Answering questions with data	Doing stuff with stuff
2	Finding patterns and relationships	
3	Correlations and models	
4	Distributions and sampling	
5	Probabilities and P-Values	
RW	--	--
6	Open Science, Reporting and Critique	
7	Qualitative Research	
8	Correlational Research	
9	Quali-Experimental Research	
10	Experimental Research	

Term 2

1	Statistical Models	
2	Inferential Statistics	
3	Power and Effect Sizes	
4	Correlation	
5	Regression	
RW	--	--
6	Multiple Regression	

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Term 2	
7	Logistic Regression
8	Comparing two means
9	Comparing several means
10	Data Skills for Employability

Y2 Term 2 Laydown

Level 6 - topline summary

Module Content

Module Learning Outcomes

Assessment

Assessment Element	Length	%	F or S	LO Tested
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Reading and Resource List

We have a custom made textbook to support key study skills throughout your degree:

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Table 14: Y3 Term 1 Laydown

Week	Lecture	Practical
Pre	Preparing to become a Psychologist	
WW	Let's measure some stuff	
1	Answering questions with data	Doing stuff with stuff
2	Finding patterns and relationships	
3	Correlations and models	
4	Distributions and sampling	
5	Probabilities and P-Values	
RW	--	--

STUFF

Level 7 - topline summary

Week	Lecture	Practical
Pre	Preparing to become a Psychologist	
WW	Let's measure some stuff	
1	Answering questions with data	Doing stuff with stuff
2	Finding patterns and relationships	
3	Correlations and models	
4	Distributions and sampling	
5	Probabilities and P-Values	
RW	--	--

Further considerations

Preparation

Need to begin preparation

Lectures x 40

Open Educational Resources Textbook for Research Methods CCBY4.0

Lab Practicals x 40

Open Educational Resources Textbook for Data Skills (Navarro) CCBY4.0

Recordings and worksheets for above x 40

Y3/MSc Bootcamp

Further considerations

Infrastructure

Recording suite

Materials storage

Estates and Facilities

Removal of computer banks in labs to make them more useful for practicals?

Wall-mounted monitors

Technology

Posit Cloud as Entry Level

Student download for Y2 onwards

Possible Posit Server run by Ian

Costs

Cost for Posit Cloud (Maybe)

Chromebooks on loan

Risks

Technology obstacles (lower than SPSS)

Finite knowledge within staff

Staff resistance

Staffing

Recruit next TFs specifically to help build the infrastructure and programme

Timetabling

HeartData week

Induction planning

Pre-arrival comms

Accessibility

QAA Benchmarks

3.4 Research methods are integral to psychology and students obtain a sound knowledge of, and a proven ability to use, a range of both qualitative and quantitative methods appropriately. Knowledge and understanding of how to obtain and analyse evidence is best acquired and demonstrated through extensive and progressive empirical work in laboratory and naturalistic settings through all stages of a degree.

3.5 Psychology students learn the basic principles of sound data collection. Given the broad theoretical scope of psychology, rigorous specialist training is required to engender a critical understanding of the role of experimental design, the choice of research methods employed, and the analytic approach taken, for testing psychological theories.

Subject knowledge and understanding 6.3 On graduating with an honours degree in psychology, graduates are able to:

1. understand the scientific underpinnings of psychology as a discipline, its historical origins, development and limitations
2. recognise the inherent variability and diversity of psychological functioning and its significance
3. demonstrate systematic knowledge and critical understanding of a range of influences on psychological functioning, how they are conceptualised across the core areas as outlined in paragraphs 4.4 and 4.5 and how they interrelate
4. demonstrate detailed knowledge of several specialised areas and/or applications, some of which are at the cutting edge of research in the discipline
5. demonstrate a systematic knowledge of a range of research paradigms, research methods and measurement techniques, including statistics and probability, and be aware of their limitations.

Subject-specific skills 6.4 On graduating with an honours degree in psychology, graduates are able to:

1. reason scientifically, understand the role of evidence and make critical judgements about arguments in psychology
2. adopt multiple perspectives and systematically analyse the relationships between them
3. detect meaningful patterns in behaviour and evaluate their significance
4. recognise the subjective and variable nature of individual experience
5. pose, operationalise and critique research questions
6. demonstrate substantial competence in research skills through practical activities

7. reason analytically and demonstrate competence in a range of quantitative and qualitative methods
8. competently initiate, design, conduct and report on an empirically-based research project under appropriate supervision, and recognise its theoretical, practical and methodological implications and limitations
9. be aware of ethical principles and approval procedures and demonstrate these in relation to personal study, particularly with regard to the research project, and be aware of the ethical context of psychology as a discipline.

Generic skills 6.5 On graduating with an honours degree in psychology, graduates are able to:

1. **communicate ideas and research findings by written, oral and visual means**
2. **interpret and use numerical, textual and other forms of data**
3. **be computer literate, for the purposes of furthering their own learning and in the analysis and presentation of ideas and research findings**
4. **solve problems by clarifying questions, considering alternative solutions and evaluating outcomes**
5. **be sensitive to, and take account of, contextual and interpersonal factors in groups and teams**
6. **undertake self-directed study and project management, in order to meet desired objectives**
7. **take charge of their own learning, and reflect and evaluate personal strengths and weaknesses for the purposes of future learning.**

References

DAPR1

2022/23

Please note: materials are added incrementally as this course progresses through the year.

Semester 1

```
-- Attaching packages ----- tidyverse 1.3.2 --
v ggplot2 3.4.1      v purrr   1.0.1
v tibble  3.1.8      v dplyr   1.1.0
v tidyr   1.3.0      v stringr 1.5.0
v readr   2.1.4      v forcats 1.0.0
-- Conflicts ----- tidyverse_conflicts() --
x dplyr::filter() masks stats::filter()
x dplyr::lag()     masks stats::lag()
```

Attaching package: 'kableExtra'

The following object is masked from 'package:dplyr':

group_rows

Semester 2

Week	Topic	Lecture slides
Sem. 1: Welcome Week	Course introduction	[Slides](https://uoepsy.github.io/dapr1/2223/lecture00/)
Sem. 1: Week 1	Research Design & Data	[Slides](https://uoepsy.github.io/dapr1/2223/lecture01/)
Sem. 1: Week 2	Describing Categorical Data	[Slides](https://uoepsy.github.io/dapr1/2223/lecture02/)
Sem. 1: Week 3	Describing Continuous Data	[Slides](https://uoepsy.github.io/dapr1/2223/lecture03/)
Sem. 1: Week 4	Describing Relationships	[Slides](https://uoepsy.github.io/dapr1/2223/lecture04/)
Sem. 1: Week 5	Functions	[Slides](https://uoepsy.github.io/dapr1/2223/lecture05/)
Sem. 1: Week 6	Formative feedback week (A)	
Sem. 1: Week 7	Probability Theory	[Slides](https://uoepsy.github.io/dapr1/2223/lecture06/)
Sem. 1: Week 8	Probability Rules	[Slides](https://uoepsy.github.io/dapr1/2223/lecture07/)
Sem. 1: Week 9	Random Variables (Discrete)	[Slides](https://uoepsy.github.io/dapr1/2223/lecture08/)
Sem. 1: Week 10	Random Variables (Continuous)	[Slides](https://uoepsy.github.io/dapr1/2223/lecture09/)
Sem. 1: Week 11	Sampling	[Slides](https://uoepsy.github.io/dapr1/2223/lecture10/)
Sem. 1: Week 12	Formative feedback week (B)	

Week	Topic	Lecture slides
Sem. 2: Week 1	Confidence intervals	[Slides](https://uoepsy.github.io/dapr1/2223/lecture11/)
Sem. 2: Week 2	Hypothesis testing: p-values	[Slides](https://uoepsy.github.io/dapr1/2223/lecture12/)
Sem. 2: Week 3	Hypothesis testing: critical values	[Slides](https://uoepsy.github.io/dapr1/2223/lecture13/)
Sem. 2: Week 4	Connecting Hypothesis testing and confidence intervals	[Slides](https://uoepsy.github.io/dapr1/2223/lecture14/)
Sem. 2: Week 5	Errors, Power, Effect size, and Assumptions	[Slides](https://uoepsy.github.io/dapr1/2223/lecture15/)
Sem. 2: Week FLW	Formative feedback week (C)	

Course description

Data Analysis for Psychology in R 1 (DAPR1) is a course

Tables

Week	Schedule			
1	Lecture:	There was a wee cooper who lived in fife and his hat was green	IndStud:	There was a wee cooper who lived in fife and his hat was green
	Lab:	There was a wee cooper who lived in fife and his hat was green	Data:	There was a wee cooper who lived in fife and his hat was green
2	Lecture:	Reading Week	IndStud:	
	Lab:		Data:	
3	Lecture:		IndStud:	
	Lab:		Data:	
4	Lecture:		IndStud:	
	Lab:		Data:	
5	Lecture:		IndStud:	
	Lab:		Data:	
6	Lecture:		IndStud:	
	Lab:		Data:	
7	Lecture:	IndStud:		
	Lab:	Data:		
8	Lecture:	IndStud:		
	Lab:	Data:		
9	Lecture:	IndStud:		
	Lab:	Data:		
10	Lecture:	IndStud:		
	Lab:	Data:		
Week	Schedule			
11	Lecture:		IndStud:	
	Lab:		Data:	
12	Lecture:		IndStud:	
	Lab:		Data:	
13	Lecture:		IndStud:	
	Lab:		Data:	
14	Lecture:		IndStud:	
	Lab:		Data:	
15	Lecture:		IndStud:	
	Lab:		Data:	

Tables

Week	Schedule
Reading Week	
16	Lecture: Lab:
17	Lecture: Lab:
18	Lecture: Lab:
19	Lecture: Lab:
20	Lecture: Lab:

Customization

Quarto allow many bells and whistles to make nice output. Read the documentation [here](#) Quarto documentation.

Examples

Looking at other people's Quarto code is a great way to figure out how to do stuff. Most will have a link to a GitHub repo where you can see the raw code. Look for a link to edit page or see source code. This will usually be on the right. Or look for the GitHub icon somewhere.

- [Quarto gallery](#)
- [nmfs-openscapes](#)
- [Faye lab manual](#)
- [quarto-titlepages](#) Note the link to edit is broken. Go to repo and look in `documentation` directory.

Rendering

The repo includes a GitHub Action that will render (build) the website automatically when you make changes to the files. It will be pushed to the `gh-pages` branch.

But when you are developing your content, you will want to render it locally.

Have you updated RStudio since about August 2022? No? Then update to a newer version of RStudio. In general, you want to keep RStudio updated and it is required to have a recent version to use Quarto.

Step 2. Clone and create RStudio project

First, clone the repo onto your local computer. How? You can click File > New Project and then select “Version Control”. Paste in the url of the repository. That will clone the repo on to your local computer. When you make changes, you will need to push those up.

Step 3. Render within RStudio

RStudio will recognize that this is a Quarto project by the presence of the `_quarto.yml` file and will see the “Build” tab. Click the “Render website” button to render to the `_site` folder.

Previewing: You can either click `index.html` in the `_site` folder and specify “preview in browser” or set up RStudio to preview to the viewer panel. To do the latter, go to Tools > Global Options > R Markdown. Then select “Show output preview in: Viewer panel”.

R Markdown

You can include R Markdown files in your project.

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
summary(cars)
```

speed	dist
Min. : 4.0	Min. : 2.00
1st Qu.:12.0	1st Qu.: 26.00
Median :15.0	Median : 36.00
Mean :15.4	Mean : 42.98
3rd Qu.:19.0	3rd Qu.: 56.00
Max. :25.0	Max. :120.00

Including Plots

You can also embed plots and reference them, like so Figure 1.

Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.

Including Tables

You can also embed tables and reference them with Table 1.

```
library(knitr)
kable(head(iris))
```

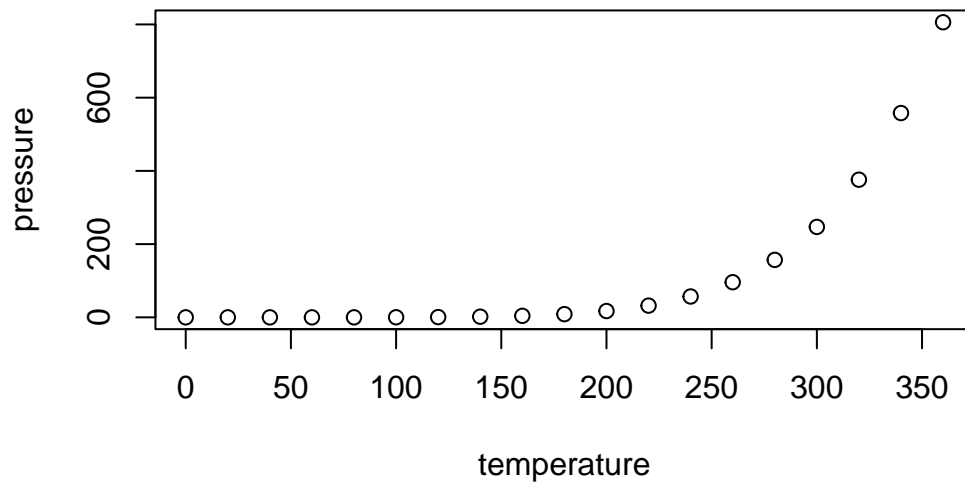


Figure 1: Plot of pressure

Table 1: Iris Data

Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
5.1	3.5	1.4	0.2	setosa
4.9	3.0	1.4	0.2	setosa
4.7	3.2	1.3	0.2	setosa
4.6	3.1	1.5	0.2	setosa
5.0	3.6	1.4	0.2	setosa
5.4	3.9	1.7	0.4	setosa

Rendering with Code

You can have code (R, Python or Julia) in your qmd file. You will need to have these installed on your local computer, but presumably you do already if you are adding code to your qmd files.

```
x <- c(5, 15, 25, 35, 45, 55)
y <- c(5, 20, 14, 32, 22, 38)
lm(x ~ y)
```

Call:

```
lm(formula = x ~ y)
```

Coefficients:

(Intercept)	y
1.056	1.326

You will need to change the GitHub Action in `.github/workflows` to install these and any needed packages in order for GitHub to be able to render your webpage. The GitHub Action install R since I used that in `code.qmd`. If you use Python or Julia instead, then you will need to update the GitHub Action to install those.

If getting the GitHub Action to work is too much hassle (and that definitely happens), you can always render locally and publish to the `gh-pages` branch. If you do this, make sure to delete or rename the GitHub Action to something like

```
render-and-publish.old.yml
```

so GitHub does not keep trying to run it. Nothing bad will happen if you don't do this, but if you are not using the action (because it keeps failing), then you don't need GitHub to run it.

Render locally and publish to gh-pages branch

To render locally and push up to the `gh-pages` branch, open a terminal window and then `cd` to the directory with the Quarto project. Type this in the terminal:

```
quarto render gh-pages
```

References

Quarto has powerful references functionality. You can easily insert citations from Zotero libraries that you maintain in the cloud (on Zotero). This allows the whole team to update the library and you can sync up to that library. Read about this on the Quarto documentation on citations. Google youtube videos on this also to see it in action.

Add a `.bib` file in to your project or add a linked Zotero library via RStudio in Visual mode with Tools > Project Options... > R Markdown > select custom libraries from the Zotero dropdown.

Then you can type `@` and you will see a dropdown of the references in your libraries. You can then select the ones to add. If you don't see the one you need, you can paste in the DOI and it will be added to your references file (with all the info). The references will be added to your references section of your book automatically.

See the `references.qmd` file for how to include the references.

- `@ansley1981` will produce Ansley & Davis (1981)
- `[@ansley1981]` will produce (Ansley & Davis, 1981).

References

Ansley, H. L. H., & Davis, C. D. (1981). *Migration and standing stock of fishes associated with artificial and natural reefs on georgia's outer continental shelf* (p. 38).