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!

```
Attaching package: 'dplyr'


The following objects are masked from 'package:stats':

    filter, lag


The following objects are masked from 'package:base':

    intersect, setdiff, setequal, union


Rows: 21 Columns: 6
-- Column specification --------------------------------------------------------
Delimiter: ","
chr (4): Lecture, Lab, Reading, DS
dbl (2): Level, Week

i Use `spec()` to retrieve the full column specification for this data.
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

Level	Week	Lecture	Lab	Reading
4	0	lect	lab	read
4	1	This is a lecture I would like to give	And this would be a spectacular lab	Reading is the secre
4	2	Football is the worst sport	Labs are for wimps	Reading is such a ga
4	3	lect3	lab3	read3
4	4	lect4	lab4	read4
4	5	lect5	lab5	read5
4	6	lect6	lab6	read6
4	7	lect7	lab7	read7
4	8	lect8	lab8	read8
4	9	lect9	lab9	read9
4	10	lect10	lab10	read10
4	11	lect11	lab11	read11
4	12	lect12	lab12	read12
4	13	lect13	lab13	read13
4	14	lect14	lab14	read14
4	15	lect15	lab15	read15
4	16	lect16	lab16	read16
4	17	lect17	lab17	read17
4	18	lect18	lab18	read18
4	19	lect19	lab19	read19
4	20	lect20	lab20	read20

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 OutcCreate 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"**[1] was originally introduced by Donald Knuth[2] in 1984)

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

Hours specification Years 1 & 2

Table 2: 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

[1] https://en.wikipedia.org/wiki/Literate_programming
[2] http://www.literateprogramming.com/knuthweb.pdf

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.

STUFF

Personal development skills

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

(**buss2020?**)

General

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:**		**IndStud:**	
	Lab:		**Data:**	
3	**Lecture:**		**IndStud:**	
	Lab:		**Data:**	
4	**Lecture:**		**IndStud:**	
	Lab:		**Data:**	
5	**Lecture:**		**IndStud:**	
	Lab:		**Data:**	
		Reading Week		
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:**	

Week	Schedule	
	Reading Week	
16	**Lecture:**	**IndStud:**
	Lab:	**Data:**
17	**Lecture:**	**IndStud:**
	Lab:	**Data:**
18	**Lecture:**	**IndStud:**
	Lab:	**Data:**
19	**Lecture:**	**IndStud:**
	Lab:	**Data:**
20	**Lecture:**	**IndStud:**
	Lab:	**Data:**

Years

Customization

Quarto allow many bells and whistles to make nice output. Read the documentation here Quarto documentation[1].

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[2]
- nmfs-openscapes[3]
- Faye lab manual[4]
- quarto-titlepages[5] Note the link to edit is broken. Go to repo and look in `documentation` directory.

[1] https://quarto.org/docs/guide/
[2] https://quarto.org/docs/gallery/
[3] https://nmfs-openscapes.github.io/
[4] https://thefaylab.github.io/lab-manual/
[5] https://nmfs-opensci.github.io/quarto_titlepages/

Customize

Edit the qmd or md files in the `content` folder. qmd files can include code (R, Python, Julia) and lots of Quarto markdown bells and whistles (like call-outs, cross-references, auto-citations and much more).

Each page should start with

```
---
title: your title
---
```

and the first header will be the 2nd level, so ##. Note, there are situations where you leave off

```
---
title: your title
---
```

and start the qmd file with a level header #, but if using the default title yaml (in the --- fence) is a good habit since it makes it easy for Quarto convert your qmd file to other formats (like into a presentation).

Add your pages the project

- Add the files to `_quarto.yml`

Set-up

This is a template for a simple Quarto book output to html, PDF or docx format. It includes a GitHub Action that will build the website automatically when you make changes to the files. The NOAA palette and fonts has been added to `theme.scss`. The webpage will be on the `gh-pages` branch. Serving the website files from this branch is a common way to keep all the website files from cluttering your main branch.

The GitHub Action installs R so you can have R code in your qmd or Rmd files. Note, you do not need to make changes to your Rmd files unless your need Quarto features like cross-references.

- Click the green “use template” button to make a repository with this content. Make sure to make your repo public (since GitHub Pages doesn’t work on private repos unless you have a paid account) and check box to include all the branches (so that you get the gh-pages branch).
- Turn on GitHub Pages under Settings > Pages . You will set pages to be made from the gh-pages branch and root directory.
- Turn on GitHub Actions under Settings > Actions > General
- Edit the repo description and Readme to add a link to the webpage. When you edit the description, you will see the link url in the url box or you can click on the Actions tab or the Settings > Pages page to find the url.

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 alway 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[1]. 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.

The 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 (**ansley1981?**)
- `[@ansley1981]` will produce (**ansley1981?**).

[1] https://quarto.org/docs/visual-editor/technical.html#citations

Considerations

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

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

asdgasdfhg

Induction planning

Pre-arrival comms

Accessibility

Homework club - Where staff are on hand every week

Student Support/Welfare

Enhanced by access to resources

Employability

R and Python are most versatile tools on the market

QAA

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