Lecture 1: Psychology as a Science

Introductions and housekeeping

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with special guests Dr Valášek & Dr Evans
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UNIVERSITY OF SUSSEX

Welcome to Psychology as a Science!

Plan for Today

1. Some general housekeeping
2. The structure of research methods in your degree
3. Why do research methods in the first place?
4. The structure of this course
5. The assessments
6. The lecture/practical topics
7. Thinking ahead to the report

General housekeeping

CANVAS in your one stop shop for all the information you need about the course

For example:

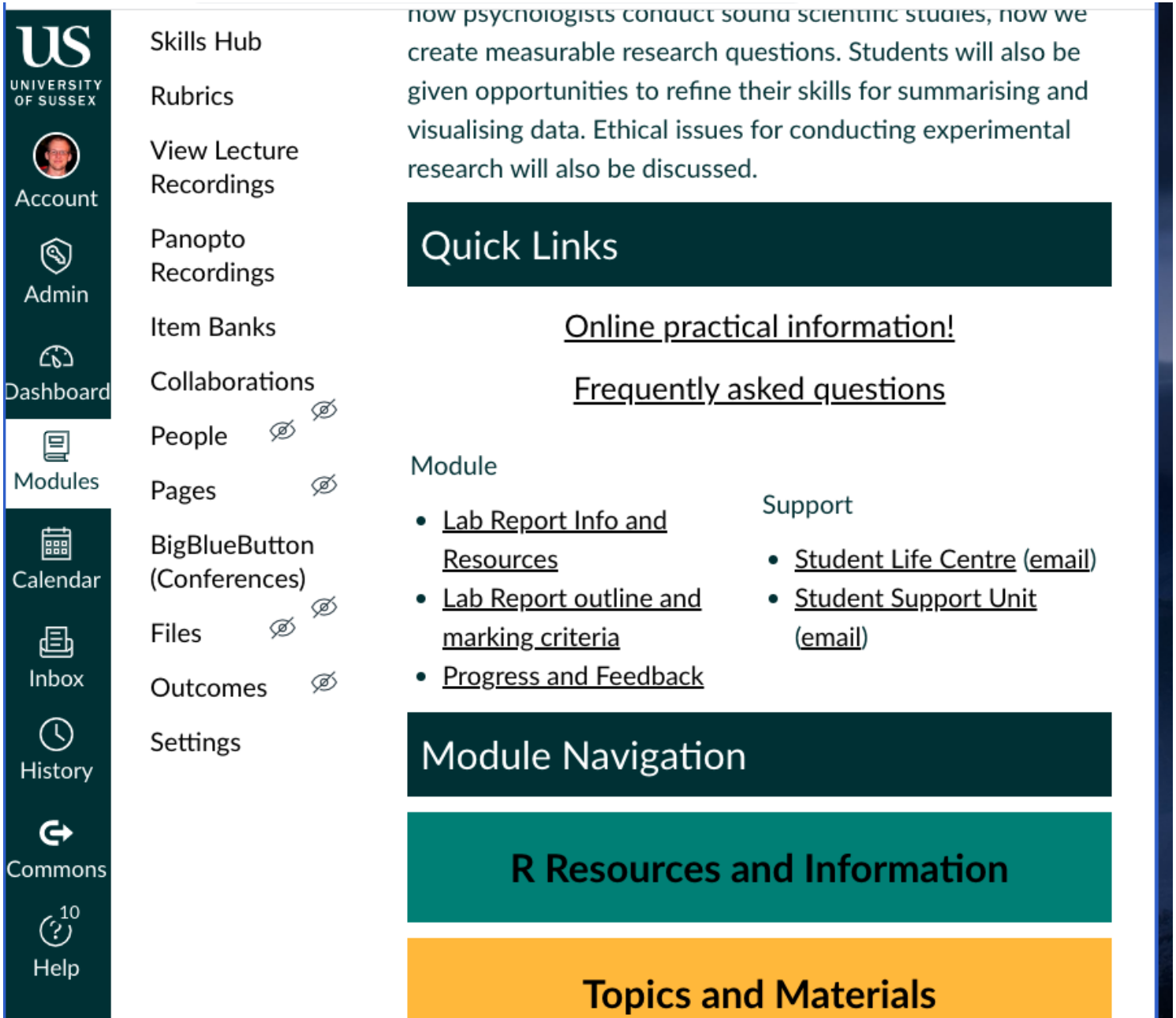
> I can't make a practical/lecture because X. What do I do?

Click on "Timetabling and Absences" on CANVAS, and it will have all the information you need.

Make sure you familiarise yourself with CANVAS. Click through all the links on the main home page for the module and try to read through it all!

Also look through the main UGrad Psychology CANVAS page. It has stacks of good information.

And remember, there's 600 of you, so I won't be able to answer all your emails as quickly as you might want. Before you email double the Frequently Asked Questions (FAQ) on the PAAS Canvas page because the answer to your question might be there, and you can get an instant answer!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History
Commons
10
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Skills Hub
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Item Banks
Collaborations
People
Pages
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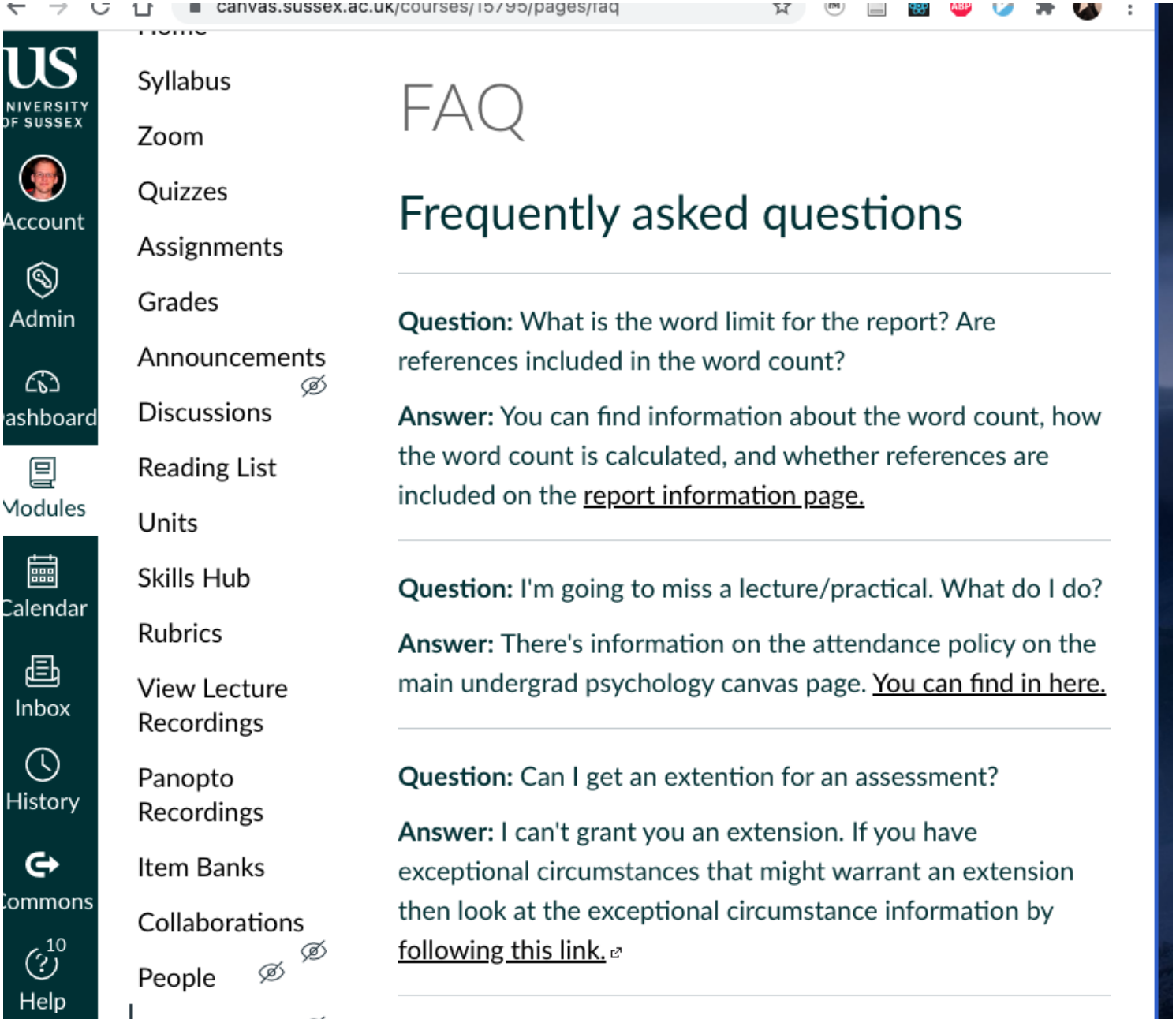
Files
Outcomes
Settings
how psychologists conduct sound scientific studies, how we create measurable research questions. Students will also be given opportunities to refine their skills for summarising and visualising data. Ethical issues for conducting experimental research will also be discussed.
Quick Links
Online practical information!
Frequently asked questions
Module
Lab Report Info and Resources
Lab Report outline and marking criteria
Progress and Feedback
Support
Student Life Centre (email)
Student Support Unit (email)
Module Navigation
R Resources and Information
Topics and Materials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10
Help
Syllabus
Zoom
Quizzes
Assignments
Grades
Announcements
Discussions
Reading List
Units
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Item Banks
Collaborations
People
FAQ
Frequently asked questions
Question: What is the word limit for the report? Are references included in the word count?
Answer: You can find information about the word count, how the word count is calculated, and whether references are included on the report information page.
Question: I'm going to miss a lecture/practical. What do I do?
Answer: There's information on the attendance policy on the main undergrad psychology canvas page. You can find in here.
Question: Can I get an extention for an assessment?
Answer: I can't grant you an extension. If you have exceptional circumstances that might warrant an extension then look at the exceptional circumstance information by following this link.

Research methods in Psychology

Psychology as a Science is the first of a series of research methods modules.

Following this, you'll take:

- Analysing Data (next term)
- Discovering Statistics (year 2)
- Quantitative and Qualitative Methods (year 2)

All of these build up to prepare you for the research dissertation in your final year. But they're also a great way to learn a lot of transferable skills that are useful outside of university, for example:

- How to analyse data
- How to make sense of statistics
- Basic computer programming/coding skills

Psychology as a Science (PAAS)

Introduction to the research process, including:

- Introduction to Philosophy of Science
- Approaches to research (quantitative methods and qualitative methods)
- Basic statistical theory

Introducing to coding using R, including:

- Basics of the R language
- Processing data in R
- Making plots with R

Along the way we'll work with some of the same data that you'll be using for your *Cognition in Clinical Contexts* lab report, and we'll also be drawing some of the same kinds of plots

Analysing Data (AD)

- Core statistical tests used in Psychology
- More advanced R, and using R to perform statistical tests
- Your first chance to independently analyse some data

Discovering Statistics (DS)

- More advanced statistical tests
- Focus on more complex analyses
- More advanced R

Quantitative and Qualitative Methods (QQM)

- Advanced multivariate statistical techniques
- Non-statistical approaches such as interviews and discourse analysis

The work you do in these modules will also connect up with other modules:

1. Analysing Data with, for example, Psychobiology
2. Discovering Statistics with, for example, Developmental Psychology
3. And Quantitative and Qualitative Methods with, for example, Social Psychology

Research methods doesn't happen in isolation, but it's connected with everything else you do in your degree

Why research methods?

The dominant approach to training psychologists is the scientist practitioner model

Doing research is seen as integral to this approach!

Just like *medical doctors* not only deliver treatments but also *develop* treatments, the same goes for *psychologists*

As a *psychologist* you want to do *what works* and being able to read, critique, and conduct research will help you know *what works* and allow you to develop *evidence-based care*

Even for those that don't become psychologists research methods is still useful

Other careers:

- Data scientists
- Analyst
- Consultant
- Civil service and government

Parts of PAAS

The module is made up of three main activities

1. Weekly lectures (double lecture in Week 6)
    - One hour each week.
    - Cover research methods, statistics, and theory
2. Tutorials/Practical preparation homework
    - About an hour a week.
    - Done online or in R as preparation for the practical class
3. Practical classes
    - Two hours a week
    - Hands on experience with R

Assessment Structure

For the assessment there's a 50/50 split between coursework and the exam

Four parts to the course work:

1. Computer Based Exam worth 10% due in approximately Wk 8

   This will cover the material from the *ethics lecture* in Wk 6

2. Computer Based Exam worth 40% (listed on Sussex Direct as due in Wk 11)

   This refers to the 10 weekly quizes. Your top 8 of the 10 will make up your final grade. Note that it's just not a single due date, but in reality each quiz will need to be completed in a specific week, so make sure you don't miss the weekly due dates!

Assessment Structure

1. Report worth 40% due in approximately Wk 9 (check *CANVAS* in case you have a different due date)

2. Portfolio with 10% (listed on Sussex Direct as due in Wk 11)

   This refers to the 20 credits worth of research participation that you're required to do as part of the course. To find out more about this follow the big yellow link labelled Research Participation/Sona.

   The due date is the *final day* you can complete research participation. Don't wait until the last week to do it, because there'll probably be no studies left to take part in. These are easy marks so don't miss out on getting them.

Why these assessments?

Each of the assessments has a specific purpose

Weekly quizzes

The weekly quizzes are there to make sure you do the tutorials and their content is based on the content of the tutorials

Doing the tutorials will make you better prepared for the practical classes that this means you'll get more out of them

I expect *many people* will get 100% for these. They're not there to trip you up, but to motivate you to work consistently throughout the term.

They're also the only assessment that will cover R/RStudio

Why these assessments?

Ethics quiz

Ethics is super important, and making a seperate assessment for it means that ethiccs part of the course it given it's own prominent place instead of mixing it with the rest of the course

Report

In the first half of the course we focus a lot on study design. The report give us a chance to see how you think.

It's not about *right/wrong* answers but a way for you to demonstrate that you've clearly thought through the relavent issues.

Research participation

We're going to learn about how to design good studies / do good science, but actually being a participant will give you insights from the other side

Why these assessments?

Final exam

The final exam is the primary means that we'll use to assess your understanding of the lecture content

The exam will only cover material from the lectures, because the practical/tutorial content will be assessed through the weekly quizzes

Lecture topics

Week	Topic
1	Introduction to PAAS
2	Philosophy of Science: What is this thing called "Science"?
3	Approaches to research: Qualitative and quantitative methods
4	Quantitative research: Measurement and variables
5	Open science: The replication crisis, preregistration, and the lab report

Lecture topics

Week	Topic
6	Samples, populations, and distributions
7	Towards statistical models: Descriptive statistics and the sampling distributions
8	Distributions, functions, transformations
9	Tables and plots: Concise data summary
10	Introduction to probability theory
11	Recap and exam guide

Tutorial and practical class topics

Week	Practical topic	Tutorial topic	Quiz topic
1	Getting setup, and installing everything	Introduction to computing	No quiz! (survey)
2	Introduction to computing	Files, paths, and projects	Introduction to computing (practice quiz)
3	Files, paths, and projects	Intro to R Markdown	Files, paths, and projects
4	Intro to R Markdown	Basics of R (Writing and running code)	Intro to R Markdown
5	Basics of R (Writing and running code)	Objects and data structures	Basics of R (Writing and running code)
6	Objects and data structures	Functions and packages	Objects and data structures

Tutorial and practical class topics

Week	Practical topic	Tutorial topic	Quiz topic
7	Functions and packages	Tidy data, and reading data into `R`	Functions and packages
8	Tidy data, and reading data into `R`	Wrangling data with `dplyr`	Tidy data, and reading data into `R`
9	Wrangling data with `dplyr`	Summarising data with `dplyr` and pipes `%>%`	Wrangling data with `dplyr`
10	Summarising data with `dplyr` and pipes `%>%`	Plotting with `ggplot`	Summarising data with `dplyr` and pipes `%>%`
11	Plotting with `ggplot`	No tutorial	Plotting with `ggplot`

The Report

We'll cover the lab report in more detail in Week 5, but you might want to start thinking *about it now*

The lab report is an APA-style research report presenting a research plan for an experiment. You'll be given a choice between one of two topics:

1. Is buying "*green*" products driven by status motives?
2. Do women find men more attractive in conjunction with the colour *red?*

On CANVAS, there are some links to background reading and some examples of studies that have addressed these or similar questions.

You'll also find more detail about the exact details of what's expected for the report

Any Questions?

https://pollev.com/drcolling

What to do for this week?

- Complete the Week 1 (Prep for Week 2) tutorial so you're ready for the practical class next week
- Get R/RStudio and OneDrive set up on your personal computer
- Familiarise yourself with Canvas (specifically, the details of the *Lab Report*, so that you can start thinking about it early).