

X2017 - Data Analysis

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25 items

Lecture 1 - Introduction to Statistics & Distributions (2 items)

Welcome to Data Analysis! Over the coming weeks we will explore all things statistical and by the end you will be well equipped to handle data. You should use Talis to keep track of your reading and to ensure that you are keeping up with the lectures and workshops. You should start revising from the very start of the module! You should also get a copy of the primary textbook, *Statistics & Data Analysis for Psychology* by Wilson & Maclean, which accompanies this course.

This first lecture will gently introduce you to inferential statistics. What are they, why do we need them, what can they tell us? We will then move on to look at distributions. Once you have data, what do you do with it? How do you represent it? Why is it useful to know about the frequency of the scores in your distribution. What is a "normal" distribution, what properties does it have and why is it useful?

Chapter 14 - Introduction to Statistics & Describing Data - in *Research Methods and Data Analysis for Psychology*, by Wilson, S Maclean, R, 2009

Chapter | **Essential**

Chapter 15 - Introduction to Inferential Statistics - in *Research Methods and Data Analysis for Psychology*, by Wilson, S Maclean, R, 2009

Chapter | **Essential** | Read p.317-321 only (stop at the "Stop & Think" box)

Lecture 2 - Probability & Significance (1 items)

In this lecture, the concept of probability will be covered. This concept is central to all inferential statistics. Following on from this, we will see how statisticians decide when something is "significant" (i.e. highly improbable). This is another key concept for statistical analyses.

Chapter 15 - Introduction to Inferential Statistics - in *Research Methods and Data Analysis for Psychology*, by Wilson, S Maclean, R, 2009

Chapter | **Essential** | Read pp. 317-323 only.

(n.b. This isn't much reading – the key thing to do for this lecture is to understand z-scores. You should try the z-score problems in the "Test Yourself" box on p. 323 and in the workbook. It is important that you know how to do these problems and what they actually mean).

Workshop 1 (3 items)

In these workshops you will start to apply what you've learned in the lectures. In lectures you will learn the theory and in the workshops you will learn how to apply this knowledge to analyse real data, in the form of both by-hand calculations and using SPSS. It's therefore essential that you don't miss any of these workshops or the lectures.

X2017 - Workshop 2 Preparation

[Document](#) | Essential

Chapter 1 - Introduction - in IBM SPSS for Psychologists (And Everybody Else), by Nicola Brace, 2016

[Chapter](#) | Recommended

Chapter 2 - Data Entry in SPSS - in IBM SPSS for Psychologists: And Everybody Else, by Nicola Brace, 2016

[Chapter](#) | Recommended

Lecture 3 - Parameters & Sampling Distributions (1 items)

One reason statistics are important is because we cannot test every single member of a population. We need some way of drawing inferences about the population based on a smaller sample. This lecture will look at some of the consequences of sampling from a population – how accurate is your measurement going to be? Does it matter how many people you sample? When can you confidently say that you have found something that is true of the population that you're interested in? Why and how do we make hypotheses?

Chapter 15 - Introduction to Inferential Statistics - in Research Methods and Data Analysis for Psychology, by Wilson, S Maclean, R, 2009

[Chapter](#) | Essential | Read pp. 324 – 340 only.

Lecture 4 - Significance Testing (1 items)

Once we've collected data, how do we draw conclusions from it? This lecture will introduce Null Hypothesis Significance Testing, which is the most widely used method of analysis in Psychology.

Chapter 15 - Introduction to Inferential Statistics - in Research Methods and Data Analysis for Psychology, by Wilson, S Maclean, R, 2009

[Chapter](#) | Essential | Read pp. 330-338 only.

Workshop 2 (1 items)

Chapter 3 - Exploring and cleaning data in SPSS - in IBM SPSS for Psychologists: And Everybody Else, by Nicola Brace, 2016

[Chapter](#) | Recommended

Lecture 5 - The T-Test (1 items)

In this lecture, we will look at t-tests. These allow researchers to decide whether two means are significantly different from each other.

Chapter 16 - Comparing differences between two samples or conditions - in Research Methods and Data Analysis for Psychology, by Wilson, S Maclean, R, 2009

[Chapter](#) | **Essential** | Read pp. 344-367 only.

Lecture 6 - One Way Anova (1 items)

t-tests are fine for when we've got two groups or two conditions to compare, but what if we've got more? ANOVA is a set of tests that looks at the variance of 3 or more groups or conditions and can tell you if there's a significant difference between them.

Chapter 17 - Comparing Differences between more than 2 conditions: One way designs - in Research Methods and Data Analysis for Psychology, by Wilson, S Maclean, R, 2009

[Chapter](#) | **Essential** | Read pp. 379-406 only.

Workshop 3 (2 items)

X2017 - Workshop 4 Preparation

[Document](#) | **Essential**

Chapter 4 - Data Handling - in IBM SPSS for Psychologists: And Everybody Else, by Nicola Brace, 2016

[Chapter](#) | **Recommended**

Lecture 7 - Non-Parametric Statistics (2 items)

Sometimes we will not be able to meet the parametric assumptions and will have to use less powerful tests. In this lecture, we will cover some of the main non-parametric tests.

Chapter 16 - Comparing differences between two samples or conditions - in Research Methods and Data Analysis for Psychology, by Wilson, S Maclean, R, 2009

[Chapter](#) | **Essential** | Read pp. 367-378 only.

Chapter 20 - Analysing Nominal Data - in Research Methods and Data Analysis for Psychology, by Wilson, S Maclean, R, 2009

[Chapter](#) | **Essential** | Read pp. 504-521 only.

Lecture 8 - Correlations (1 items)

Sometimes we need to know how closely associated two things are. This is when correlational tests come in handy. Did you know there is a statistically significant correlation between the number of storks held in captivity and a country's birth-rate? Find out why in this lecture.

Chapter 19 - Testing for relationships and making predictions - in Research Methods and Data Analysis for Psychology, by Wilson, S Maclean, R, 2009

Chapter | **Essential** | Read pp. 463-478 only. (Please ignore the formula in the book. Use the ones from the lecture instead)

Workshop 4 (2 items)

Workshop 5 Preparation

Document | **Essential**

Chapter 5 - Tests of difference for one- and two- sample designs - in IBM SPSS for Psychologists: And Everybody Else, by Nicola Brace, 2016

Chapter | **Recommended**

Lecture 9 - Regression Analysis (1 items)

It is often useful to be able to make predictions about one unknown based on a known. For example, we might want to see if it is possible to predict who will pass the Data Analysis exam (unknown) based on their performance on Methods of Psychological Inquiry (known). Regression can do this.

Chapter 19 - Testing for relationships and making predictions - in Research Methods and Data Analysis for Psychology, by Wilson, S Maclean, R, 2009

Chapter | **Essential** | Read pp. 480- 490 only.

Lecture 10 - Revision Session (1 items)

A brief recap on everything we've covered over the past weeks plus a few survival tips for the exam.

X2017 - Practise Exam

Document | **Essential** | You should do this test as part of your revision by the time this lecture comes. You can find the answers and another practise test on the Hub site.

Workshop 5 (1 items)

Chapter 8 - Analysis of variance - in IBM SPSS for Psychologists: And Everybody Else, Sixth Edition, by Nicola Brace, 2016

Chapter | **Recommended**

Workshop 6 (1 items)

In this session you have your last opportunity to ask questions about the course. So make sure you have a go at the practise exams before this session and ask to go over anything you're not sure about.

Chapter 6 - Tests of correlation and bivariate regression - in IBM SPSS for Psychologists:

And Everybody Else, by Nicola Brace, 2016

Chapter | Recommended

Books Used in the Module (3 items)

Research methods and data analysis for psychology, by Stuart Wilson; Rory MacLean, c2011

Book | Essential

IBM SPSS for Psychologists: And Everybody Else, Sixth Edition, by Nicola Brace; Col Richard Kemp; Rosemary Snelgar, 2016

Book | Recommended

The SPSS Survival Guide, by Julie Pallant, 2013

Book | Recommended