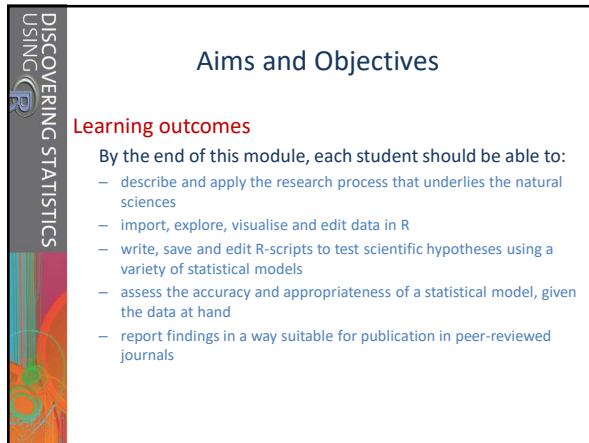


DISCOVERING STATISTICS
USING R

BIO 209: "Discovering Statistics using R"

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1



DISCOVERING STATISTICS
USING R

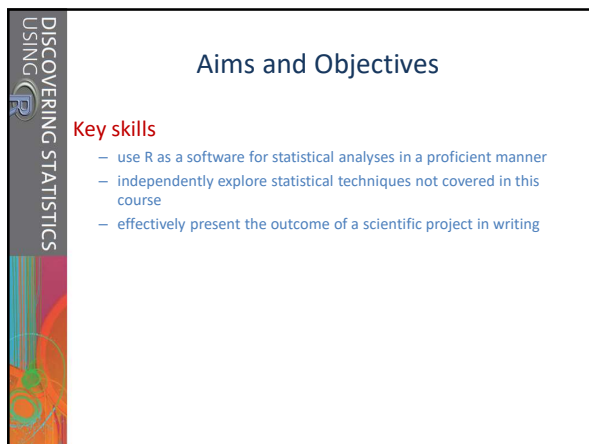
Aims and Objectives

Learning outcomes

By the end of this module, each student should be able to:

- describe and apply the research process that underlies the natural sciences
- import, explore, visualise and edit data in R
- write, save and edit R-scripts to test scientific hypotheses using a variety of statistical models
- assess the accuracy and appropriateness of a statistical model, given the data at hand
- report findings in a way suitable for publication in peer-reviewed journals

2



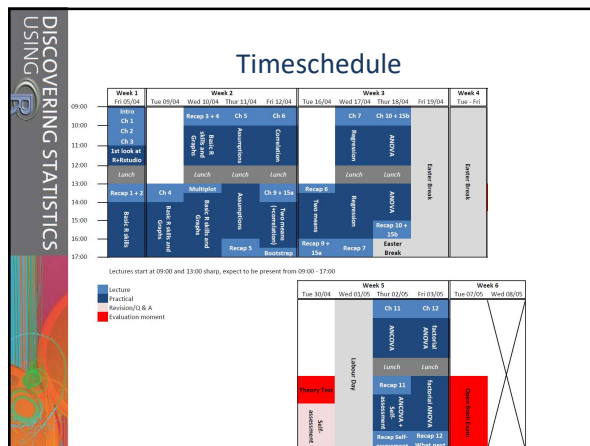
DISCOVERING STATISTICS
USING R

Aims and Objectives

Key skills

- use R as a software for statistical analyses in a proficient manner
- independently explore statistical techniques not covered in this course
- effectively present the outcome of a scientific project in writing

3



4

The main book

- December 2012 review in *Animal Behaviour***
...Finally, what of Andy Field and colleagues, with their Discovering Statistics Using R? Probably the wittiest and most amusing of the lot (no, really), this book takes yet another approach: it is 958 pages of R-based stats wisdom...
- ...a thoroughly engaging, expansive, thoughtful and complete guide to modern statistics. Selfdeprecating stories lighten the tone, and the [...] 'stupid faces' (Brian Haemorrhage, Jane Superbrain, Oliver Twisted, etc.) soon stop feeling like a gimmick, and help to break up the text with useful snippets of stats wisdom. It is very much a student textbook but it is brilliant...*
- ... Buy as many copies as you can...*

5


The main book

- Thick (and heavy!) book, but at the very least read the following sections of each chapter:**
 - “What will this chapter tell me?”

Cramming Sam: Samantha hates statistics. In fact, she thinks it's all a boring waste of time and she just wants to pass her exam and forget that she ever had to know anything about normal distributions. So, she appears and gives you a summary of the key points that you need to know. If, like Samantha, you're cramming for an exam, she will tell you the essential information to save you having to trawl through hundreds of pages of my drivel.

- “What have I discovered about statistics?”


6



Computer room

- Introduction to using the computers
 - Tina Siegenthaler, 10:00
- Nevertheless, I encourage you to use your own laptop
 - Probably easier and more intuitive
 - Make sure things work on your own machine
 - After course you'll be using your own laptop anyway
 - Fill long, boring evenings at home with exciting R-stuff!!

7



OLAT

- Lots of supporting material
 - Data, scripts, and solutions to all exercises in the book
 - Lecture handouts
 - Recap scripts
- Copy all material to your computer/laptop
 - Make the folder easily accessible (e.g. call it "BIO 209" and place it on your Desktop)
 - Keep the sub-folder structure the same as on OLAT

8
