

Statistical Case Studies

Exam Questions and Exercises

- Explicit instructions
- Little or no context
- Data provided, clean, small and ready to go
- No interaction with other people
- Completed in a short time

Statistical consultancy with complex real-world data

- What is the question?
- Context is very important
- Data available? Data is a mess?
- Communication central to success
- Analysis may evolve over a long time

Statistical Case Studies

- Workshop sessions: Thursday 2 hours, 14:10 - 16:00
 - ▶ Weeks 1-3: Alder Lecture Theatre, Nucleus Building.
 - ▶ Weeks 4-11: Room G.03, Murchiston House
- Assessment: 100% coursework.
 - ▶ Semester 1: Consultancy style group project. Two parts, the first is worth 10% and the second is worth 35%. Part 1 submission deadline: October 18th. Part 2 submission deadline: November 22nd
 - ▶ Semester 2: Consultancy style group project. Also worth 45% in total
 - ▶ Presentation / Poster at end of semester 2, worth 10%
- Self selected groups (of size 3) which can differ between Part 1 and Part 2
- Lecturer Semester 1: Gordon Ross, gordon.ross@ed.ac.uk
- Lecturer Semester 2: Amy Wilson, amy.wilson@ed.ac.uk
- Online tools: Learn Ultra, PIAZZA

- Learn
 - ▶ lectures and lecture slides
 - ▶ Project Data and background material
 - ▶ Guides for project
- PIAZZA: Question and Answer forum

- Supervised learning, discriminant analysis, K-nearest neighbours, other machine learning methods
- Prediction/forecasting, performance assessment, cross-validation
- Visualisation, exploratory data analysis

Recommended textbooks

- Nothing specific, but “An Introduction to Statistical Learning” is generally a good summary of supervised learning methods. A free (legal) PDF is available online
- For those wanting a slightly more rigorous/mathematical treatment (although not needed for the course), “Elements of Statistical Learning” by the same authors is a standard reference