

DEPARTMENT OF STATISTICS
Paper 475.330 : Advanced Statistical Modelling
Course Description : Semester 2, 2000

1. TOPICS STUDIED

This course provides an introduction to the process and procedures of statistical data analysis. The topics to be covered include multiple regression, analysis of variance and analysis of covariance. We will also consider some extensions of this kind of analysis to generalised linear models, including log-linear models and logistic regression models.

- An Introduction to UNIX and S-PLUS
- Multiple Linear Regression
- Regression Diagnostics
- Generalised Linear Models
- Graphical Methods

2. COURSE NOTES

Advanced Statistical Modelling by Lee, Triggs and Ihaka (\$20),

documents the statistical methodology for the first half of the course. It is available from the SMIS Resource Centre in the basement of the Maths/Physics building.

3. COMPUTING FACILITIES

The class will be using the Mathematics and Statistics advanced computing laboratory (Room G45) which is directly above the large undergraduate computing laboratory. There will be a short introduction to the use of the laboratory. The laboratory has been booked from 9 to 12 Friday Morning (21 July) and from 2 to 5 Monday afternoon (24 July) for this purpose. Plan to drop by for approximately 60 minutes during one of these periods.

4. ASSIGNMENTS

Assignments will typically involve carrying out an analysis of a set of data and then writing a report on your analysis. The report should follow the following guidelines.

1. They must be typed. If you have a PC and word-processing software you should probably use that to type your reports, but there will be facilities in the teaching laboratory for typesetting.
2. Your reports should **not** consist of annotated computer output. They should be written in non-technical language and explain the analysis for someone who is informed about the subject matter, but not necessarily an expert on statistics.
3. A description of the technical part of the analyses should be given as an appendix to your report. Again, annotated output is not acceptable.

Assignments should be handed in to the appropriate box in the basement of the Maths/Physics building by the SMIS Resource Centre, by 4pm on the following due dates:

Assignment	Due date
1	Friday 11 August
2	Friday 25 August
3	Friday 29 September
4	Friday 13 October

5. ASSESSMENT

The final grade will be computed as follows:

$$25\% \text{ Assignments} + 15\% \text{ Test} + 60\% \text{ Examination}$$

with the caveat that you must get 50% in the final exam in order to pass the course.

The terms test will be held during the lecture period on Friday 15 September.

6. TIMETABLE

The class is scheduled for Tuesday through Friday at 9am. The Friday period will be used as a tutorial hour. No new material will be covered in this period. Instead, we will look at additional examples and you can ask questions about work covered in class, or problems arising in the computer lab.

Office hours will be discussed in class.

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