DEPARTMENT OF STATISTICS

Paper STATS 330 : Advanced Statistical Modelling

Course Description : Semester 2, 2001

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,

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. The "Advanced Lab" is located on the first floor of the Maths/Physics building. To get to it you need to go through the Computer Science Undergraduate Laboratory. There will be a short introduction to the use of the laboratory. The laboratory has been booked from 9 to 11 Friday Morning (20 July) and from 2 to 4 Tuesday afternoon (24 July) for this purpose. Plan to drop by for approximately 50 minutes during one of these periods.

4. WEBPAGE

The STATS 330 webpage contains announcements, course information, current and past assignments, past tests, past exams, revision questions and data sets. The address of the webpage is www.stat.auckland.ac.nz/330 or you can access it through the advanced lab home page.

5. ASSIGNMENTS

Assignments will typically involve carrying out an analysis of a set of data and then writing a report on your analysis. Your report should conform to the following guidelines:

1. It must be typed. If you have a PC and word-processing software you can use that to type your reports, but there will be facilities in the teaching laboratory for typesetting.

2. Your report should **not** consist of annotated computer output. It 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 10 August
2	Friday 24 August
3	Friday 28 September
4	Friday 12 October

6. ASSESSMENT

The final grade will be computed as follows:

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

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 14 September.

7. 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.

Arden Miller
Department of Statistics
Room 208, Ext. 5053