Department of Statistics

Paper 475.330 **Assignment 2** **Due: Friday 25 August**

In this assignment you will explore data that was extracted from the Los Angeles Heart Study (supervised by J. M. Chapman). The data consists of measurements of the following variables taken for 60 men:

age:	age in years
sbp:	systolic blood pressure in mm of mercury
chl:	cholesterol in mg per dl
ht:	height in inches
wt:	weight in pounds

A data frame containing this data called heartstudy.df has been created in Splus on the advanced lab server. To access this data simply logon to the advlab computer, start Splus and type

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> heartstudy.df
```

For this assignment you need to create a suitable model for predicting systolic blood pressure using the remaining variables. Your assignment should consist of two parts. The first part should be a report that someone who is not familiar with statistical ideas and language will be able to understand. It should present the model and explain what it indicates about the relationship between systolic blood pressure and the other variables. You should evaluate the accuracy of the predictions produced by your model and discuss any limitations of the model.

The second part of your assignment is a statistical appendix that explains to the marker what you did. It should be typeset (annotated computer output is not acceptable) and present a coherent argument for your analysis. Do not include output for all the things you tried. An explanation of what you did with a few key pieces of evidence (plots and/or output) will suffice. Your statistical appendix should contain the following:

1. An explanation of why you chose the model you did.
2. A full set of diagnostics for your model and a discussion of these.
3. A discussion of outliers, high leverage and influential points (if they exist). Discuss the impact of these observations on the fitted model and indicate what measures you feel are appropriate to deal with these observations.

This assignment should be handed in to the appropriate box in the basement of the Maths/Physics building by the SMIS Resource Centre, by 4pm on Friday, 25 August.