Math 583, SAS on Windows Handout

SAS is a statistical software package that will be used in this course. You will need a disk. There are SAS manuals and books at the library, but they are not needed in this course. To use SAS on windows (PC), use the following steps.

1) Double click on the *Math Progs* icon and after a window appears, double click on the *SAS* icon. If your computer does not have SAS, go to another computer.

2) A window should appear with 3 icons. Double click on *The SAS System for ....*

3) Like Minitab a window with a split screen will open. The top screen says *Log-(Untitled)* while the bottom screen says *Editor-Untitled1.* Press the spacebar and an asterisk appears: *Editor-Untitled1*.*

Get or enter the SAS program given in point 4) below in *Notepad* or *Word.* When you are done entering the program, save your file as h3d1.sas on your flash drive (eg F: drive). (On the top menu of the editor, use the commands "File > Save as". A window will appear. Use the upper right arrow to locate the your flashdrive and then type the file name in the bottom box. Click on OK.)

4) Cut and paste the following SAS program from
(http://parker.ad.siu.edu/Olive/regsas.txt)
or enter the program in *Notepad* or *Word.* The data is testing whether the mean nitrogen content of clover innoculated with strains of bacteria depends on the strain. The *ls* stands for linesize so *l* is a lowercase *L*, not the number one.

```
options ls = 70;
data clover;
input strain $ nitrogen @@;
cards;
3dok1  19.4  3dok1  32.6  3dok1  27.0  3dok1  32.1  3dok1  33.0
3dok5  17.7  3dok5  24.8  3dok5  27.9  3dok5  25.2  3dok5  24.3
3dok4  17.0  3dok4  19.4  3dok4   9.1  3dok4  11.9  3dok4  15.8
3dok7  20.7  3dok7  21.0  3dok7  20.5  3dok7  18.8  3dok7  18.6
3dok13 14.3  3dok13 14.4  3dok13 11.8  3dok13 11.6  3dok13 14.2
compos 17.3  compos 19.4  compos 19.1  compos 16.9  compos 20.8
;
proc anova;
  class strain;
  model nitrogen=strain;
  means strain / duncan waller;
  means strain / lsd tukey cldiff;
proc print;
```

5) Cut and paste the program into the SAS editor window. To execute the program, use the top menu commands "Run>Submit". An output window will appear if successful.

If you were not successful, look at the *log window* for hints on errors. A single typo can cause failure. Reopen your file in *Word* or *Notepad* and make corrections. Occasionally you can not find your error. Then find your instructor or wait a few hours and reenter the program.

6) To copy and paste relevant output into *Word,* click on the output window and use the top menu commands "Edit>Select All" and then the menu commands "Edit>Copy".

In *Notepad* use the commands "Edit>Paste". Then use the mouse to highlight the relevant output. Then use the commands "Edit>Copy".

Finally, in *Word*, use the commands "Edit>Paste".

You may want to save your SAS output as the file HW3d1.doc on your disk.

6) This point explains the SAS commands. The semicolon ";" is used to end SAS commands and the "options ls = 70;" command makes the output readable. (An "*" can be used to insert comments into the SAS program. Try putting an * before the options command and see what it does to the output.) The next step is to get the data into SAS. The command "data clover;" gives the name "clover" to the data set. The command "input strain $ nitrogen @ @;" says the first entry is variable strain and the $ means it is categorical, the second variable is nitrogen and the @@ means read 2 variables, then 2, ..., until the end of the data. The command "cards;" means that the data is entered below. Then the data in entered and the isolated semicolon indicates that the last case has been entered.

The commands "proc anova; class = strain; model nitrogen = strain; tells SAS to perform one way Anova with nitrogen as the response variable and strain as the factor.

The following websites may be of interest.

(Google SAS Stat User's Guide)

http://support.sas.com/documentation/onlinedoc/stat/index.html