STAT 441/541 FINAL PROJECT

You (and, if desired, one colleague) will design, run, analyze, and present results for an experiment of your choosing.

- **If you are working alone**, and you run a single-factor experiment, then the factor must have at least 5 levels that you can impose on experimental units.

- **If you are working alone**, and you run a multi-factor experiment, then one factor must have at least 3 levels that you can impose on experimental units. All other factors can have as few as two-levels.

- **If you work as a part of a pair**, then the experiment must have at least two factors with an associated interaction in the model, and at least one factor has to have at least 4 levels.

- No experiment will involve growing plants.

**Proposal** (10 points): Submit a brief summary of your proposed design. The proposal must word-processed and include:
  
  - The factors and their levels.
  
  - The response of interest and how it will be measured.
  
  - The model associated with this design.
  
  - The hypotheses of interest to be tested and any other procedures you may use (e.g., a multiple comparison test, contrasts).
  
  - The protocol describing how the experiment will be conducted.
  
  - Where randomization occurs.

**Running the Experiment** (5 points):

- Submit an electronic copy of the data (Word document, Excel spreadsheet, text file, ...).

- If applicable, comment on any unusual problems encountered while running the experiment.
The Report (20 points):

In your report, briefly describe the experiment and provide a thorough analysis. Much of the description can be extracted from information in the proposal. The analysis must include an ANOVA with diagnostic plots as well as parameter estimates. Do not include information which will not be discussed in the report. There will be a penalty if you do.

Presentation (10 points):

- Include a summary of the design and analysis with clearly stated conclusions.
- If you had more time and/or money resources, what subsequent experimentation would you propose that is related to the goals of this experiment?
- Answer questions from the audience.

Attendance at Presentations (5 points):

Due Dates:

- The last day to submit the Proposal is Monday, April 11. I will return my comments on the Proposal within 2 days of submission. You should not collect data until after you address any questions I have regarding the Proposal.

- You must provide me with a copy of the data once it has been collected. It must be submitted prior to submitting the report.

- The report is due the final exam period (Monday, May 4, 8:00-9:50). You are welcome to submit the report any time before this date.

- The presentations will be given during the end of the final week of classes and during the final exam period. The presentation should be 5-7 minutes for one person and 8-10 minutes for a two-person group. Each person in a group must present an equal proportion of the presentation. I recommend that you practice before presenting to be sure that it is neither too long nor too short. There will be a penalty if you do not stay within the time requirements.