

Part of your course grade in STAT 401 depends upon successful, on time, completion of Team Project #1. This project is to be done in a team of no more than 5. It should result in a thorough, but concise, professional quality technical report of not more than 10 typed (12 pt font or larger) double-spaced pages. Projects are to be handed in to Dr. Bob by the end of class Friday, October 31, 2008. The written reports will not be returned, so if you want to have a copy to keep, make a copy before turning in the report.

Statistics is the study of how best to collect, summarize and draw conclusions from data. When working with data one is always faced with variability. The focus of this project is **on correlation and simple linear regression**, using one variable to help explain the variability in a second variable. You must plan, collect, and analyze the results of a sampling study or experiment that looks at the relationship between two numerical variables. You must have at least 40 data points in your study. You are to make a thorough but concise report of your entire study. Include at least:

- An executive summary (a brief, one or two paragraphs, but complete summary of what you have done and what you have learned). This should be written in a manner that can be read and understood by someone who may not know much about statistics.

- A description of your sampling study or experiment including:
 - The question, or problem, you investigated.
 - Explanatory and response variables.
 - A statement of how you expected the study to turn out before you collected your data.
 - What you did to collect the data.
 - A list of the raw data you obtained and circumstances surrounding their collection.
 - Appropriate statistical analyses of the data (use graphical as well as numerical summaries and include interpretations).
 - A statement of what you learned about your problem from the analysis of the data.
 - A discussion of further questions raised by your study that might be investigated in the future.

Simply attaching a ream of JMP output is **not** an appropriate statistical analysis! The main body of the report should include only the end products of any statistical calculations. You should cut/paste important graphs and output into the body of your report. Remember JMP gives you more than you need so do not include graphs and output that are not needed. Including unnecessary JMP output will result in deductions from your final project score.

Write the report as though someone with only a rudimentary understanding of statistics were going to read it. Statistical jargon used just for the sake of using statistical jargon will not be well received. It is fine to say that something is statistically significant but go further to explain what this means. If you need some suggestions for projects, please see me: however, topics chosen by the individual teams are often more meaningful and interesting to the team than topics suggested by others (including me). Surveys or opinion polls are often too complicated, time consuming and may require IRB approval for research on human subjects and so are often not suitable for this type of project. It is important that you use random sampling from a well defined population for a sampling study and random assignment of experimental units to treatments for an experiment. Feel free to discuss your ideas with me during lab.

Together with the written report, each team member can include a separate sealed envelope giving his/her assessment of the percentage of total team effort provided by each team member. In the event it becomes evident that the project workload is wildly unbalanced within a team, I will assign differing individual project grades to team members. If no envelopes are turned in I will assume that everyone on the team contributed equally.

Due Dates:

- **Oct. 7** – Determine your team members (submit names to me) and turn in a brief proposal for your project. This should include the question or problem you want to investigate and the explanatory and response variables. I must approve your project proposals before you can proceed.
- **Oct. 14, 21, and 28** – You will have some time during lab to work on your project and for your team to meet with me to discuss the team's progress.
- **Oct. 24** – A copy of your data is sent via email to me. Data collection must be finished by this date and no changes can be made to your data once it is submitted.
- **Oct. 31** – Final reports, one per team, are due. These are to be typed (word processed) on plain white paper and should not exceed 10 double-spaced pages. A cover page, separate pages of JMP output and appendices count towards the total of 10 pages. If there are more than 10 pages turned in, I will ignore the additional pages.