

Mathematics 106.03 — Elements of Statistics — Fall 2011
Design and Analysis Project Report Requirements and Hints

Big Facts About the Project

- **You will work in pairs for the entire project.**
- **Each paired team will submit one written project report.**
- **The written project report is worth 12% of your final course grade.**
- **You can turn in your written report early, but you must submit your report by Friday, December 16, at 4:00 p.m.**

The design and analysis project is a statistical analysis assignment, but it is also a technical writing assignment. For the data and analysis project, you will create a data set through design and experimentation, explore and analyze the data, draw conclusions and interpretations, validate assumptions, and present your results in a formal report. Your formal report should be of professional quality — typed, having a cover sheet, introduction, body, and results and conclusions. It should be well-written with good use of both technical and non-technical language, and displaying appropriate graphics. The grade on your report will be weighted, giving 70% weight to mathematical and statistical correctness, and 30% to presentation. Your project report should include:

— Professional cover sheet. Imagine this report is going to a client, and by all means, you want the client to hire you as an analyst again in the future.

— Introduction. Introduce and motivate your design and data collection. Explain as much as you can about the data set, such as the how, who, when, why, and where it was collected.

— Exploration. Explore the data set graphically and numerically and present the results of the explorations. This serves two purposes — it familiarizes the reader to the data set which facilitates a better understanding of the core analysis, and it motivates the natural analysis questions.

— Development. Develop statistical models and the appropriate analysis using methods from the course. Why is your method of analysis appropriate in light of the introduction issues above?

— Analysis. Provide a detailed analysis of the data set. This might require you to address several relevant questions inherent to the data set. Computer output should be included and explained in detail. Tables should be introduced and presented within text, not stuck alone in an appendix.

— Graphics. Present your analysis in a professional format, with good use of graphics. Graphs should be completely labeled, and referred to and introduced in text. Don't stick relevant graphs alone in an appendix.

— Context. Interpret the results in the proper context. What do the results mean for the population sampled from?

— Validation. Carefully check assumptions, discussing possible problems and sensitivities of the analysis.

— Data. When you submit your report, you must also submit a copy of your data in electronic format such as in an e-mail attachment.