

MATH 437/537 requires a project, upon which 45% of your grade will depend. The deliverable is a professional quality technical report of no more than 15 pages (including figures and tables). The project must be an analysis of a real data set. You must have clearly stated research questions with logical analysis and conclusions. Include all appropriate plots. Include your computer code for each portion of the analysis in a well-organized appendix, which will not count toward the 15-page limit. It is due on Monday, May 4, at 5pm.

Your report should include the following:

- Describe the data set and clearly state the question of interest.
- Construct one or more statistical models to address the question of interest.
- Describe in some detail the procedures used to construct the models.
- Clearly explain the assumptions necessary for the validity of the models.
- Thoroughly examine the appropriateness of the models.
- State your conclusions, and show how they are justified by your analysis.
- Discuss the limitations of your approach.

Do not include computer printout. Computer code should be included in an appendix. Computer-produced plots are acceptable.

The requirements for MATH 437 differ from those of MATH 537, as follows:

For MATH 437 students: You may work in groups of 1, 2, or 3. You may use a dataset that is preformatted and available in R libraries, or in a textbook so long as it has not been part of a homework assignment. **The analysis must be original, not a reproduction of something already done.**

For MATH 537 students: You must work individually. You are required to obtain a dataset from a source other than a software package or textbook. You may use a dataset that is part of your research. If you don't already have a dataset, here are some websites where raw data can be obtained. You are not limited to these websites.

- University of California at Irvine Machine Learning Repository
<https://archive.ics.uci.edu/ml>
- General Social Survey
<http://www3.norc.ox.ac.uk/GSS+Website>
- Health Data
<http://www.dartmouthatlas.org>
- General Data
<http://www.data.gov/>