

## STAT512 Final Project Requirements

The final project is due by **Tuesday 5/14 by midnight**.

Students need to provide data for their project. The analysis for the project needs to focus on a topic from the course: multiple regression, logistic regression, factorial ANOVA or mixed models. Note that all of these topics include **at least 2** predictor variables.

The write-up should be 5 pages **or less** and written in the same style as a journal article, but with more detail and focus on the analysis. Graphs and write up need not be “publication quality”, but they should be clear and conciseness will be evaluated. For example, a graph should only be included in a paper **only if** you have something to say about it and it reveals something of interest.

We will take at least one scheduled class day to work on projects. This will be a chance to bring your laptop and share what you have done so far and plan to do with classmates and me. It will be very informal, but a great chance to have others look over your work (especially if you do not have an opportunity to share with a lab group or similar).

### Project Elements/Grading (20 pts total)

**Note:** The project should focus on just a single response variable. Running the same analysis for multiple response variables will not earn additional credit.

#### Introduction (2 pts)

- Background

- Identify research questions (1 or 2)

#### Data Description (2 pts)

- Identify observational/experimental units

- Number of observations

- Response and predictor variables

- Identify each variable as continuous or categorical (with levels)

- Further details of design

#### Summary statistics and/or graphics (3 pts)

- Typically done before formal model fitting

#### Analysis (5 pts)

- Description/discussion of analysis

- Give enough detail that someone else could recreate your results

- OK to try different things

- Justify any choices that you made as part of the analysis

- Discuss model assumptions (You would not include diagnostic plots in a published article, but consider including them for the project.)

**Results and Conclusions (4 pts)**

- Presentation of results
- Type 3 ANOVA table and/or table of estimated coefficients
- Other results as appropriate
- Interpretation and discussion (even if nothing is significant!)
- Respond to your research questions

**Overall Style (2 pts)**

- 5 pages or less (including graphs but not R code or references)
- Complete sentences and correct grammar
- R code should NOT be included in main body of the report
- While some tables and results can be “copied” from R output, the reader should not have to sift through superfluous output.

**R code (2 pts)**

- Congruency of R code vs written description