Final Exam Review
(100 points total)

Final Exam: Wednesday 12/10, 3:30-5:20
As usual, before the exam I am happy to answer any questions you want to ask. You will have the full time to complete the test if you need it.

Short Essay (40 points)
There will be 2 short essay questions, 20 points each. These are open-ended questions on definitions and concepts. Answers should be about 1 paragraph. I will pick 2 questions from the following list:

- List and describe the four causal criteria discussed in class and in the book. Explain how regression analysis can address each of these criteria. What are the limitations of regression analysis for addressing each of these criteria in conducting applied research?

- What are simple slope tests in regression analysis? When are they used and why are they important? Give a real or hypothetical example from your area of research (not from the homework, class, or the readings) illustrating simple slopes.

- In words, define an odds ratio. Explain how to interpret odds ratios for positive and negative relationships, being sure to specify how an odds ratio is interpreted for dichotomous and continuous independent variables. Illustrate these concepts with real or hypothetical examples. With continuous predictors, why are odds ratios rather than the regression coefficient usually reported and interpreted?

- Why is a loglinear transformation of expected probabilities needed in logistic regression analysis? Explain how the transformation of the predicted probabilities can be generalized for other types of analyses. Give two real or hypothetical examples that would use two different types of alternative regression models discussed in class or in the readings (other than logistic and OLS regression).

Multiple Choice (30 points)
There will be 15 multiple choice questions worth 2 points each. These may be on any of the assigned reading or the lecture material from 11/12/14 through 12/3/14. The purpose of these questions is to make sure you have read the material and learned the concepts from the text and class lecture.

Computations and Interpretation of Results (30 points)
There will be two computational or printout interpretation problems (15 pts each). You may bring a single sheet of 8 1/2 X 11 paper, using both sides, with any formulas that you think you may need. (Note: this sheet can only be used for the computation portion of the exam.) You may also bring the diagnostics handout with cutoff values to use on this portion of the exam. Please bring a calculator to class. I will supply any statistical tables you might need. These questions may include one or more of the following:

Computations:
odds ratio from 2 X 2 contingency frequency table, likelihood ratio test (G or “chi-square” in SPSS) from deviance statistics from any two logistic models, find the odds ratio from the unstandardized regression coefficient.

Interpret:
output from: a curvilinear regression, an interaction test (including macro output), plot of simple slopes, mediation analysis (including macro output), residual scatter plot, interpretation of diagnostic output (studentized deleted residuals, leverage, Mahalanobis distance, Cook's distance, DFFITs, DFBETAs, residual plots) [You may use your diagnostics handout for this section of the exam.], logistic analysis, including the overall fit (likelihood ratio “chi-square” test), odds ratios, confidence intervals for odds ratios, and Wald chi-square test.