Final Exam Review
(100 points total)

Final: Tue June 7, 3:30 PM, *Urban Center 220*
The final exam is not explicitly cumulative. However, you will need to have a solid understanding of significance testing, sampling distributions, Type I and II errors, and similar basic concepts. The length and nature of the test are the same as the midterm exam. You will have the full 2 ½ hours to complete the exam 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 learned from the readings and lectures. Answers should be about 1 paragraph. I will pick 2 questions from the following set:

1. What is Cronbach's alpha used for? Explain what it represents conceptually. If you use a measure that has a low Cronbach's alpha, what are the potential consequences for your significance test?

2. Define and distinguish between *post hoc* and *planned* (*a priori)* contrasts used in conjunction with one-way ANOVA. Describe the problem of familywise error and when it is of the greatest concern.

3. Give a brief, general description of the differences in designs in which within-subjects and between-subjects ANOVA are appropriate. What are the advantages of within-subjects designs? Explain conceptually how the error term differs in within-subjects and between-subjects ANOVA (for simplicity, consider just the two-level case).

4. One-way ANOVA partitions the variance of Y into two types of variation. Describe these two types of variation and why their ratio is important for testing group differences. How is the variance of Y partitioned in factorial ANOVA? Give an example (real or hypothesized) of an interaction from your area of research (not from class or the book).

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 May 10th through May 31st. 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 (30 points)
There will be two computational problems (15 pts each). You may bring a single sheet of 8 1/2 X 11 paper, using both sides, *hand written* with any formulas that you think you may need. (Note: this sheet can only be used for the computation portion of the quiz). Please bring a calculator to class. I will supply any statistical tables you might need. Computations or interpretation of SPSS printouts will include one or more of the following. (In order to save time for some of these analysis, I may give you a partial printout or partially completed ANOVA table and ask you to compute the missing information). Examples will be similar to problems appearing on HW 2 and HW 3.

Calculations

Repeated measures t-test, z-proportions test & confidence limits, margin of error, chi-square test, one-way ANOVA

Printout Interpretations

Paired t-test, correlation, scatterplot, chi-square, z-proportions test, reliability, one-way ANOVA, Tukey test, factorial ANOVA, simple effects test, within-subjects ANOVA, mixed factorial ANOVA