Syllabus: Statistical Methods (18:820:581)
Fall Semester, 2008

Instructor: Amanda McCluskey
Office: TBD
Office hours: by appt.
Home: 718-887-3708 calls welcome 10am-10pm
Email: mccluska@rci.rutgers.edu

Required Texts

Suggested/Recommended
Any how to use SPSS for windows guides out there, two good ones are:
Kirkpatrick, L. A., & Feeney, B. C. A simple guide to SPSS for Windows
Kinnear, P. R., & Gray, C. D. SPSS 16 made simple. Psychology Press: 2008. or the SPSS 15 version of the book--they are very, very similar.

Other Required Readings
Other required readings will be posted on the sakai site for the course. The ARC computer lab (next door) is a good place to print readings. They also have SPSS.

Objectives
This course will familiarize you with basic statistics and measurement including one-way and two-way ANOVA, repeated measures ANOVA, Mixed ANOVA, correlation, chi square, and reliability. You will get experience computing the tests and interpreting the results. You will need to make friends with a basic calculator and with the SPSS software (the computer labs, such as the one at ARC have SPSS). If you aren't able to finish the computer portions of the assignments during our scheduled time in the lab, you will need to go on your own.
The statistics you will learn in this course are only the beginning--the basics necessary for understanding the statistics typically used in psychological and educational research these days. But don't be discouraged! The material covered in this course is the foundation; learning this material well will provide a strong framework on which future additions can be built.

Grading
Grades will be based on two examinations and a computer data analysis project. There will be approximately six assignments. Assignments will be discussed at the beginning of class on the due date; the answer key will be circulated and discussed at that time. I strongly urge you to complete each assignment on time, even though they do not "count" in your grade. Past experience suggests that thorough and timely completion of assignments is related to exam performance. Students are encouraged to work together on assignments. One reason I provide an answer key is so you can see the recommended wording—sometimes in statistics that can be an
issue, so pay close attention to that. Exams will be open book. No make-up exams will be allowed unless **prior approval** is secured. Letter grades will be assigned on each exam and on the project, and then these will be averaged for your final letter grade.

**Class Topics and Assigned Readings**

**Sept. 3**  
**Introductions; Go over syllabus; Advice; Begin Review, ARC LAB Intro**

**Sept. 10**  
**Continue Review of hypothesis testing; t tests**  
**Using the computer for data analysis; ARC LAB session**  
Roscoe 1.5, 2.1, 2.2, 2.3  
Stanovich: preface and ch 1-3;

**Sept. 17**  
**One-way ANOVA; ARC LAB session**  
Stevens Chapter 2  
Stanovich ch. 4

**Sept. 24**  
**Magnitude of Effect; Power/sample size; ARC LAB**  
**Interpreting nonsignificant findings**  
Stevens Chapter 3; Fagley & McKinney (1983) Reviewer Bias;  

**Oct 1**  
**Factorial ANOVA: sig, omega sq., power; ARC LAB**  
Stevens Chapter 4; Stanovich: ch. 6;  
Mitchell & Hart **ARC LAB session**;

**Oct. 8**  
**Single-factor Within-subjects Design; ARC LAB**  
K, S, & T: ch. 11; Stanovich ch 7-9;

**Oct. 15**  
**Mixed ANOVAs; ARC LAB**  
K, S, & T: ch. 12; Stanovich ch. 10-11;

**Oct. 22**  
**Catch up and Review for Exam**

**Oct 29**  
**Exam I**

**Nov. 5**  
**Correlation (sig., r-sq, power, ballantines); ARC LAB**  
Keppel, Saufley, & Tokunaga (1992) ch. 15;  

**Nov. 12**  
**Prediction/Bivariate Regression; Scatterplots (outliers, heteroscedasticity, curvilinearity). ARC LAB**  
Stevens Chapter 6  
Cohen & Cohen: ch. 2-focus on pp.41-51.  
Supplemental: Meyers, Gamst, & Guarino
Nov. 19 **Factors affecting r; ARC LAB**  
Cohen & Cohen 2.11.1 to the end of chpt 2.  
Shavelson(1981)Sources of Misleading Correlations; Stanovich ch. 5

Dec 3 **Chi Square** Analysis; Measurement of Constructs  
K, S, & T: ch. 14;  
Murphy & Davidshofer (1991)

Dec. 10 **Correlation, Reliability, & Interrater Agreement; ARC Lab**  
Kaplan: Reliability & Validity; Kerlinger: Reliability theory; Kazdin: interrater agreement;  
Rosenthal part of ch. 2: Sampling Judges and Encoders--intraclass correlation.

Dec. 17 **Exam II**

Note: Reading assignments may be changed in class. Further, some material not included in readings will be included in the lectures and may be included on the exams