

PSYC 70500
STATISTICAL METHODS IN PSYCHOLOGY I

Margaret Rosario, Ph.D.
City University of New York, Clinical Psychology
Office hours by appointment
Tuesday 8:00-9:40 and Thursday 8:00-9:00 in NAC 7-236
Thursday 9:10-9:40 in NAC 6-105

This course provides an introduction to inferential statistics. Tuesday is a lecture. Thursday is for review and conceptually based homework during the first part of the session. The last hour of the Thursday session is for the computer lab and its exercises; bring a flash drive to lab. By the end of this course, you will have knowledge of basic statistics and SPSSx.

Most of September is devoted to reviewing undergraduate statistics. Computer lab is not scheduled during this time. The following undergraduate text is recommended for those in search of a reference: Grimm, L.G. (1993). *Statistical applications for the behavioral sciences*. New York: Wiley.

Three examinations are scheduled. The first one addresses undergraduate statistics and counts toward 10% of the final grade. The second concerns power and accounts for 30% of the total grade. The third examination covers the material from and including power through split-plot analysis; the exam comprises 60% of the grade. In addition, the computer lab is rated pass/fail and a failing grade will lower the final course grade by a third (e.g., from B to B-). An optional project may be available to boost the final grade.

Required Texts (available in the CCNY bookstore)

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. (2nd ed.). Hillsdale, NJ: Erlbaum.

Kirk, R. E. (1995). *Experimental design: Procedures for the behavioral sciences*. (3rd ed.) New York: Brooks/Cole.

Recommended Statistical Software

SPSS Graduate Pack can be obtained for a reasonable price from www.journeyed.com. However, doctoral-student fees make SPSSx accessible by means of a GC portal.

Course Schedule

September 1 Introduction. Review probability, definitions, and scales.

September 3 Review central tendency and variability.

September 8 Review transformations, hypothesis testing, z test and t -test.

September 10 Review continues of z test and t -test.

- September 15 Review dependent t -test and Pearson correlation coefficient, r
- September 17 Review non-parametric statistics: chi-square (χ^2) and, time permitting, others
- September 22 **Examination on undergraduate statistics.**
- September 24 Review examination. **Computer lab begins.**
- September 29 **No class, as per CUNY schedule**
- October 1 Concept of statistical power and power of t test (Chapters 1 and 2 of Cohen). **No computer lab.**
- October 6 Statistical power of t and difference between two t 's (Chapters 3 and 4 of Cohen).
- October 8 Class: Homework assignment #1 and assignment #2 (handouts).
- October 13 **Second examination on statistical power**
- October 15 Class: Review examination
- October 20 ANOVA (Chapter 3 of Kirk, pp.72-107)
- October 22 For class, homework assignment #3, items 1-16 (handout). For lab, problem #8A in Kirk (p.208).
- October 27 Multiple Comparisons (Chapter 4 of Kirk, pp. 113-159).
- October 29 Multiple Comparisons (cont.). Homework assignment #3, items 17-18 (handout). **No computer lab.**
- November 3 Factorial Design (Chapter 9 of Kirk, pp. 366-389).
- November 5 Homework assignment #4 (handout). For lab, problem #8A in Kirk (p.208), compute protected t test, Tukey HSD, and Scheffé; compare and contrast the results. Problem # 6A for factorial design in Kirk (pp. 432-433). Conclusions.
- November 10 **No class or lab; Professor at conference**
- November 12 Randomized Blocks (Chapter 7 of Kirk, pp. 251-289). **No computer lab.**
- November 17 Repeated measures.

November 19 Homework assignment #5 (handout). For lab, Homework problem # 7A in Kirk (pp. 308-309) and conclusions.

November 24 Split Plot (Chapter 12 of Kirk, pp. 512-540).

November 27 **No class or lab; Thanksgiving**

December 1 Split Plot (cont.).

December 3 Homework assignment #6 (handout). For lab, homework problem #8A in Kirk (pp. 581-582) and conclusions.

December 8 Review.

December 10 **Third examination. No computer lab.**