

Multivariate Statistics for Psychology (542)

Dr. Jeff Holm

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Required Texts and Material:

Required: (a) Using Multivariate Statistics (5th Edition) 2007 by Barbara Tabachnick & Linda Fidell

(b) SPSS (I suggest using version 12.0 or higher) Program must be able to perform the following SPSS procedures: a) regression: linear and binary logistic, b) general linear model, c) classify, and d) data reduction: factor

Optional: (a) Various SPSS Manuals (see: <http://www.norusis.com/>)

(b) Advanced and Multivariate Statistical Methods 2nd Edition 2002
by Mertler & Vannatta – Pyrczak Publishing

This class is designed to provide a working knowledge of multivariate statistics. We will focus on the appropriate use and interpretation of a variety of multivariate statistics using SPSS. Your task will be to become familiar with the various statistical techniques so you know when to use them, how to use them, and how to interpret them. You will receive some instruction in SPSS, but this is not a course on SPSS – so you may have to do some self-learning regarding the SPSS program.

Class Goals

1. to become familiar with a variety of multivariate techniques, particularly linear regression binary logistic regression, discriminant analysis, multivariate analysis of variance, repeated measures analysis, and factor analysis.
2. to learn how to run SPSS for each statistical technique that we discuss in class.
3. to learn how to interpret the statistical output you obtain from each SPSS program.
4. Finally, and most importantly, to know the statistical analyses that can be properly used to address a specific research question.

In this class you will be expected to read the assigned material prior to class, participate in class discussions, complete a SPSS assignment for each statistical technique we cover, complete 2 closed book/closed notes exams (200 points each). The first exam will be held October 16 (Tuesday) at 6:30 PM. The second exam will be held during the final exam period – Monday, December 10 at 3:00 PM. Exams will be scheduled for 2 hours.

The grading scale will be:

90% and above = A
80% to 90% = B
70% to 80% = C
60% to 70% = D
Below 60% = F

Topic Order

1. Introduction to Course and Multivariate Statistics (Chapter 1, 2, 4, & 17)
 - a. Statistical Techniques
 - b. Data Screening and Cleaning
 - c. General Linear Modeling
2. Multiple Regression (Chapter 5)
3. Logistic Regression (focused on Binary) (Chapter 10)
4. Principal Components and Factor Analysis (Chapter 13)

FIRST EXAM (10/16/07 at 6:30 PM)

5. Discriminant Analysis (Chapter 9)
6. Multivariate Analysis of Variance (MANOVA) and Covariance (MANCOVA) (Chapter 3, 6, and 7)
7. Repeated Measures – Univariate and Multivariate Approaches (Chapter 8)

SECOND EXAM (12/10/07 at 3:00 PM)
