

## APSTA-GE.2004 -- Course Information – Spring 2014

**Instructor:** Sharon L. Weinberg  
**Email:** [sharon.weinberg@nyu.edu](mailto:sharon.weinberg@nyu.edu)  
**Phone/Fax:** 212-998-2373/212-995-4832  
**Office:** Kimball Hall, 246 Greene Street, Room 805  
**Office Hours:** Tuesdays, 10:00am to noon and by appointment

**TA:** Sukhmani Singh  
**Email:** [sukhmani@nyu.edu](mailto:sukhmani@nyu.edu)  
**Office:** TBD  
**Office Hours:** TBD

### **Class Meeting Time/Room:**

Tuesdays, 3:30 pm to 6:10 pm in Waverly Room 669.

### **Lab Section Meeting Times:**

Tuesdays, 6:20 pm to 7:35 pm in 194 Mercer, Room 304.

Although optional, attendance in the lab section is strongly encouraged. The lab provides software demonstrations of what is discussed in class, and hands-on guidance for homework assignments.

### **Course Goals:**

This seven-week module extends the material covered in RESCH-GE.2003 by providing an introduction to some of the more advanced topics in multivariate data analysis for the behavioral, social, and health sciences. The topics to be covered are univariate repeated measures analysis of variance, multivariate analysis of variance as an alternative approach to univariate repeated measures analysis of variance, multivariate analysis of variance as applied to other than univariate repeated measures-type designs, non-recursive path analysis, principal component analysis, exploratory factor analysis, confirmatory factor analysis, and structural equation models as a hybrid that combines both path analysis and confirmatory factor analysis under a single analytic framework. The software packages, SPSS, STATA, and MPLUS, will be used to give students hands-on experience with analyzing data using the methods covered.

### **Course Orientation:**

This course provides a conceptually oriented, nonmathematical approach to learning the methods covered in class. It is not appropriate for students seeking to learn the mathematical theory underlying these methods.

### **Prerequisites:**

RESCH-GE.2003 or the equivalent.

### **Website:**

The course uses My Classes for posting lecture notes, handouts, readings, homework assignments, and general information.

### **Text:**

The course lecture notes serve as the primary text for the course, however, you may also wish to purchase: *Applied Statistics: From Bivariate Through Multivariate Techniques (2<sup>nd</sup> edition, 2013)* by Rebecca M. Warner, published by Sage. This book is available in the NYU Book Store.

**Course Requirements & Grading:**

**Supplementary Readings:** As posted on the My Classes website.

**Homework:** Practicing what has been covered in class is essential to learning statistics. Homework will be assigned, collected, and graded each week. All students are responsible for completing all homework assignments on time and raising related questions in class.

**Grading:**

10%                    Class attendance and participation  
 90%                    Computer-based homework problem sets

**Syllabus:**

<i>APSTA-GE.2004 Syllabus – Advanced Modeling I: Topics in Multivariate Analysis</i>			
<i>Month</i>	<i>Day</i>	<i>Topic</i>	<i>Reading from Text</i>
January	28	Repeated Measures Analysis of Variance -- Within Subjects Design (Lecture Notes #1)	Chapter 22, pp.953-1006.
February	04	Repeated Measures Analysis of Variance – Mixed Model Design& Intro to MLM (Lecture Notes #2)	
	11	Multivariate Analysis of Variance (Lecture Notes #3)	Chapter 19, pp. 778-826.
	18	Structural Equation Modeling – The Recursive Path Analysis Model -- (Lecture Notes #4)	Chapter 16. pp. 645-685.
	25	Data Reduction: Principal Component Analysis (Lecture Notes #5A); Latent Constructs: Exploratory Factor Analysis (Lecture Notes #5B)	Chapter 20, pp. 829-890
	04	Structural Equation Modeling – The Confirmatory Factor Analysis Model (Lecture Notes #6)	Chapter 20, 890-895.
March	11	Structural Equation Modeling – The Hybrid Model (Lecture Notes #7)	Chapter 20, 890-895.