

Course Syllabus

Title: Seminar in Psychology: Statistical Modeling for Latent Variables
PSY 6930/7930: Section 001

Term: Spring 2014
Tuesdays and Thursdays: 9:30-10:45am

Location: University Hall – Room #1610

Credit Hours: 3

Instructor: Jon Elhai, Ph.D. | TA: Ateka Contractor
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Office Hours: Tuesdays: 11:00am-12:00pm
University Hall (UH) – Room #1370

Required Reading: Kline, R. B. (2010). Principles and practice of structural equation modeling (3rd Ed.). New York: Guilford. Note: this book is available at the University of Toledo library.

Prerequisites: Quantitative Methods for Psychology II (PSY 6110 or 7110) is a prerequisite for this course.

Otherwise, special permission must be granted by the Instructor. Note: training on Multivariate Analysis of Variance (MANOVA) is not required before enrolling in this course.

Learning Objectives:

1. Students should identify the theory behind the statistical techniques covered in this course.

2. Students should explain the assumptions behind the statistical techniques covered in this course.

3. Students should be able to execute the statistical techniques covered in this course.

Course Policies and Procedures

1. Attendance: It is the responsibility of each student to attend all classes, and turn in all assignments on time.

Schedule of Classes and Readings (The assigned chapter should be read **before** each class)

Week	Note	Required Reading	Class Session	Activity Due
1/6		-K-Ch. 1-2	-Introduction -Choosing Appropriate Statistics -Review of Univariate Statistics	
1/13		-K-Ch. 3 -Graham Article	-Screening Data/Missing SEM Data -Matrix Algebra	

Note: This syllabus may be appended by the instructor if necessary. Students are responsible for any changes made.

Recommended Texts (for further information on related content, but not required for this course):

Multivariate Statistics (general resource)

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston, Massachusetts: Allyn and Bacon.

Mplus Software

Muthén, L. K., & Muthén, B. O. (1998-2010). *Mplus user's guide* (6th ed.). Los Angeles, California: Muthén &

Muthén. Downloadable at no charge from: <http://www.statmodel.com/ug excerpts.shtml>

Mplus Video Tutorials: http://www.statmodel.com/course_materials.shtml

Effect Size and Power in Latent Variable Modeling

Muthén, L. K., & Muthén, B. O. (2002). How to use a Monte Carlo study to decide on sample size and determine power. *Structural Equation Modeling*, 4, 599-620.

Exploratory Factor Analysis

Sass, D. A., & Schmitt, T. A. (2010). A comparative investigation of rotation criteria within exploratory factor analysis. *Multivariate Behavioral Research*, 45, 73-103. doi: 10.1080/00273170903504810

Confirmatory Factor Analysis/Path Analysis/SEM