**PSY 6341**  
Multivariate Statistics  
Samantha Estrada PhD | Spring 2020

- **Required Texts:**  
  *Using R With Multivariate Statistics* 1st Edition by Randall E. Schumacker  
  *R for Data Science* by Garrett Grolemund and Hadley Wickham  
  [https://r4ds.had.co.nz/](https://r4ds.had.co.nz/)  
  I will also provide other publicly available texts via Canvas.

**Course Catalog Description**

Includes study and application of complex multivariate research designs and multivariate statistical analyses including MANOVA/MANCV, discriminant function analysis, canonical analysis, structural equation modeling and factor analysis.

**Required Prerequisites:** PSYC 6341

**Student Learning Outcomes:** As a result of this course, successful students will be able to:

- Identify and articulate the theoretical underpinnings of multivariate statistical models and designs.
- Articulate advanced principles of multivariate statistical analyses, including multivariate distributions, hypotheses and analytic methods.
- Accurately choose and conduct multivariate statistical data analyses, using R statistical software, emphasizing the assumptions, appropriate uses, and the interpretation of each.
- Write about the results of multivariate statistical analyses in journal format.
- Design multivariate research studies for use with clinical populations.

**Grade Distribution**

Class Projects 50%  
Critiques 10%  
Final Project 10%  
Presentation 30%

**Grading Scale**

A=90% +, B=80%-89%, C=70%-79%, D= 60%-69%, F = less than 60%

**Topical Outline**

- Introduction & Matrix Algebra  
- Multivariate Statistics Assumptions  
- Hotelling’s T2: A Two-Group Multivariate Analysis  
- Multivariate Analysis of Variance  
- Multivariate Analysis of Covariance  
- Multivariate Repeated Measures  
- Discriminant Analysis  
- Canonical Correlation  
- Exploratory Factor Analysis  
- Hierarchical Linear Modeling  
- Structural Equation Modeling

**Class Schedule**

The class and assignment schedule can be found in Canvas.

**University Policies**

You can read the university policies here: [https://www.uttyler.edu/links/](https://www.uttyler.edu/links/)