

COURSE OUTLINE

COURSE PREFIX AND NUMBER: EDL 802

COURSE TITLE: Quantitative Methods

COURSE PREREQUISITES: Graduate level statistics course

COURSE DESCRIPTION for catalog:

(Credit 3 hours) This course builds on the foundations of research and statistics and introduces advanced statistical techniques commonly used in educational research. Focus is on developing skills in parametric and nonparametric analyses through the use of statistical analysis software.

OBJECTIVES:

Upon completion of this course, the students will be able to:

1. Demonstrate techniques of exploratory data analysis.
2. Differentiate between parametric and nonparametric testing procedures.
3. Describe and utilize analyses including ANOVA, regression analyses, discriminate analyses, canonical correlation, and factor analyses.
4. Demonstrate the ability to create, edit, update, transfer, and manage data files as well as the ability to transfer and retrieve data using the internet and e-mail.
5. Demonstrate the ability to create appropriate data structures for analyses using SPSS.
6. Demonstrate the ability to interpret results of analyses for policy decision-making.
7. Demonstrate the ability to communicate appropriately research findings for the writing of research reports using APA style.

TOPICAL OUTLINE:

Review of Descriptive Statistics and Data Screening
Factorial ANOVA
Testing for Interactions
Simple Main Effects Tests
Simple Linear Regression
Multiple Regression Analysis
Logistic Regression
Multiple Analysis of Variance (MANOVA)
Discriminate Analysis
Data Reduction/Factor Analysis

METHODOLOGIES:

Teaching strategies will include discussions, lecture, and demonstrations. Students will also have extensive time in computer labs utilizing statistical software.

EVALUATION:

Students will be evaluated through written examinations, practical examinations, projects, and class participation. Each instructor reserves the right to establish additional methods of assessment. Artifacts for the Portfolio may be required.

POSSIBLE REQUIRED TEXTS:

Field, A. (2005). *Discovering statistics using SPSS* (2nd ed). London: Sage.

Grimm, L. G., & Yarnold, P. R. (1994). *Reading and understanding multivariate statistics*. Washington, DC: American Psychological Association.

Grimm, L. G., & Yarnold, P. R. (2000). *Reading and understanding more multivariate statistics*. Washington, DC: American Psychological Association.

RECOMMENDED REFERENCES:

American Psychological Association. (1994). *Publication manual of the American Psychological Association* (5th ed). Washington, DC: Author.

Babbie, E. R. (2003). *Practice of social research* (10th ed). Belmont, CA: Wadsworth.

Cone, J. D., & Foster, S. L. (2006). *Dissertations and theses from start to finish* (2nd ed). Washington, DC: American Psychological Association.

Creswell, J. W. (2001). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Upper Saddle River, NJ: Prentice Hall.

Gay, L. R., & Airasian, P. W. (2002). *Educational research: Competencies for analysis and applications* (7th ed). Upper Saddle River, NJ: Prentice Hall.