

**CNE 787(2) WORKSHOP IN COUNSELOR EDUCATION
MULTIVARIATE METHODS
SUMMER 2006**

This is a required course for the Counselor Education Ph.D. Program.

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Required Texts:

Mertler, C. A. & Vannatta, R. A. (2005). *Advanced and Multivariate Statistical Methods* (3rd ed.). Glendale, CA 91225: Pyrczak Publishing. ISBN 1-884585-59-0. **Primary textbook.**

Field, A. (2005). *Discovering statistics using SPSS* (2nd ed.). London: Sage Publications Ltd. ISBN 0-7619-4452-4.

Cronk, B. C. (2004). *How to use SPSS* (3rd ed.). Glendale, CA: Pyrczak Publishing. ISBN 1-884585-55-8.

Holcomb, Z. C. (2004). *Interpreting basic statistics* (4th ed.). Glendale, CA: Pyrczak Publishing. ISBN 1-884585-51-5.

Statistical Package for Social Sciences: Student Version - available at SHSU Bookstore. You may also access SPSS through remote access at the University. Directions for remote access were provided in CNE 787(1). If you need assistance, call the Computer Help Desk, 936-294-1950.

Recommended Text(s):

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston: Pearson Publishing.

Prerequisites: Methods of Research and CNE 787(1) Workshop in Counselor Education Statistics

Course Goal: To learn how to manage, analyze, and interpret multivariate data related to counselor education themes at the doctoral level.

Objectives:

- Use Statistical Package for Social Sciences (SPSS) for entering, coding, analyzing, and interpreting data.
- Review univariate statistics.
- Use SPSS for making charts of analyzed data.

- Develop null and alternative hypotheses for all analyses.
- Write research questions for all analyses.
- Test the assumptions for factorial ANOVA.
- Analyze and interpret data using factorial ANOVA.
- Test the assumptions for Factor Analysis.
- Analyze and interpret data using Factor Analysis.
- Test the assumptions for multivariate statistics -Multiple Regression.
- Analyze and interpret data using Multiple Regression.
- Test the assumption for Discriminant Analysis.
- Analyze and interpret data using Discriminant Analysis.
- Conduct an “a priori analysis”, power analysis, for determining the sample size needed to avoid making a Type II Error.
- Interpret statistical significance.
- Interpret practical significance using effect size and confidence intervals.

Format for class:

The format consists of primarily demonstration with instructor at the computer guiding each person on their own computer through analyses. Additionally the class will consist of mini-lectures, small and large group discussions, and computer work outside of class. Evaluation for the course will be determined by 2 tests and 50 pts in participation worth 250 pts.

Assignments

<u>Date</u>	<u>Assignment</u>
Week 1 August 23, 2007	<ul style="list-style-type: none"> • Review Univariate Statistics. • Review using all templates provided in 787(1). • Use SPSS.
Week 2 – August 30, 2007	<ul style="list-style-type: none"> • Review Univariate Statistics. • Review using all templates provided in 787(1). • Use SPSS. • <i>Interpreting... 4th, # 42.</i>
Week 3 - September 6, 2007	<ul style="list-style-type: none"> • Power Analysis, Effect Sizes, and Confidence Intervals. • <i>How to Use SPSS, 105-109.</i> • Handouts will also be provided by professor.
Week 4 – September 13, 2007	<ul style="list-style-type: none"> • Ch. 4 – <i>Advanced and Multivariate....</i> • Use dataset for testing assumptions and conducting factorial ANOVA.

	<ul style="list-style-type: none"> • Template will be provided. • Rubric for assessment – pg. 90.
Week 5 – September 20, 2007	<ul style="list-style-type: none"> • Ch. 4 – <i>Advanced and Multivariate....</i> • Use dataset for testing assumptions and conducting factorial ANOVA. • Template will be provided. • Rubric for assessment – pg. 90. • <i>Interpreting....#45.</i> <p> </p>
Week 6 – September 27, 2007	<ul style="list-style-type: none"> • <i>How to use SPSS</i>, Ch. 8. –Test Construction – Validity and Reliability. • How to Collect Data – Handout will be given. • Dataset will be provided to calculate a Cronbach's alpha. • <i>Interpreting....#41.</i>
Week 7 – October 4, 2007	<ul style="list-style-type: none"> • <i>Advanced and Multivariate.....</i>Ch. 9, Factor Analysis. . • Dataset will be provided to conduct a factor analysis.
Week 8 – October 11, 2007	<ul style="list-style-type: none"> • <i>Advanced and Multivariate.....</i>Ch. 9, Factor Analysis. . • Dataset will be provided to conduct a factor analysis.
Week 9 – October 18, 2007	<ul style="list-style-type: none"> • Test, calculate Cronbach's alpha and Factor Analysis.
Week 10 – October 25, 2007	<ul style="list-style-type: none"> • <i>Advanced and Multivariate.....</i>Ch. 7, Multiple Regression. • Dataset will be provided to conduct multiple regression. • Rubric for assessment – pg. 195
Week 11 – November 1, 2007	<ul style="list-style-type: none"> • <i>Advanced and Multivariate.....</i>Ch. 7, Multiple Regression. • Dataset will be provided to conduct multiple regression. • Rubric for assessment – pg. 195 • <i>Interpreting, # 27.</i>

Week 12 – November, 8 2007	<ul style="list-style-type: none"> • <i>Advanced and Multivariate.....Ch. 7, Multiple Regression.</i> • Dataset will be provided to conduct multiple regression. • Rubric for assessment – pg. 195 • <i>Interpreting, # 27.</i>
Week 13 – November 15, 2007	<ul style="list-style-type: none"> • <i>Advanced and Multivariate.....Ch. 10, Discriminant Analysis.</i> • Dataset will be provided to conduct Discriminant analysis. • Rubric for assessment – pg. 310.
Week 14 – November 22, 2007 Holiday	<ul style="list-style-type: none"> • Test on Multiple Regression – dataset will be provided. • Rubric for assessment – pg. 195. • No class.
Week 15 – November 29,2007	<ul style="list-style-type: none"> • Test on Multiple Regression – dataset will be provided. • Rubric for assessment – pg. 195

EVALUATION: Two tests will be given for a total of 200 points. Participation in class (arriving on time, reading assignments, bringing necessary materials, listening attentively to those speaking, preparing homework before class, volunteering to answer questions, keeping distractions to a minimum) for a total of 50 points.

250 – 225 = A

224 – 200 = B

199 – 140 = C

FOR YOUR INFORMATION

- ✓ If you are a student with a **disability** that may affect your academic performance, please contact the professor as soon as possible or you may contact the Director of the Counseling Center as chair of the Committee for Continuing Assistance for Disabled Students at 294-1720.
- ✓ **Very Important!!! New Students** (registered after summer 2007) are required to purchase a student account to use TK20, Campus Tools HigherEd Assessment and Management System. This system is used to conduct assessments for all students in the College of Education. Purchase your account for \$100. plus tax at <https://tk20.shsu.edu/campustoolshighered/>. This will allow you access for 7 years
- ✓ **Academic honesty** is expected in this class. Plagiarism is a violation and will result in course failure.

- ✓ **Attendance.** Spring & Fall attendance policy. Students are permitted to miss one class (3 hours) with no penalty, but a call to the professor of the class is expected. A second absence will require that the student submit a letter to the Department of Educational Leadership & Counseling Faculty explaining the circumstances of the absence. The faculty will decide if the second absence should be excused. If it is not excused, a deduction of a letter grade for the course will occur. Subsequent absences will result in automatic letter grade reductions. Summer attendance policy is different. You will be permitted one excused absence (one class period). Subsequent absences will result in a deduction of one letter grade per absence.
- ✓ **Religious Holidays.** An institution of higher education shall excuse students from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence. A student who plans to miss a class or required activity to observe a religious holy day should inform the professor in writing prior to planned absence.
- ✓ **Late assignments** will be penalized by one letter grade for each 24-hour- period they are not turned in.
- ✓ The **syllabus** is subject to change pending notification.

CACREP OBJECTIVES:

1. Professional Identity – Studies that provide an understanding of all of the following aspects of professional functioning
 - K1b; professional roles, functions, & relationships with other human services providers
 - K1d; Professional organizations, primarily ACA
 - K1e; professional credentialing, including certification, licensure, and accreditation
 - K1h; ethical standards of ACA and related entities, and applications of ethical and legal considerations in professional counseling
2. Social and Cultural Diversity – Studies that provide an understanding of the cultural context of relationships, issues and trends in a multicultural and diverse society related to such factors as culture, ethnicity, nationality, age, gender, sexual orientation, mental and physical characteristics, education, family values, religious & spiritual values, socioeconomic status and unique characteristics of individuals, couples, families, ethnic groups, and communities including all of the following:
 - K2a; Multicultural & pluralistic trends, including characteristics and concerns between and within diverse groups nationally and internationally
3. Career Development – Studies that provide an understanding of career development and related life factors, including:
 - K4a; Career development theories and decision-making models
5. Helping Relationships – Studies that provide an understanding of counseling and consultation processes, including all of the following:
 - K5a. Counselor and consultant characteristics and behaviors that influence helping processes including age, gender, and ethnic differences, verbal and nonverbal behaviors and personal characteristics, orientations, and skills
7. Assessment – Studies that provide an understanding of individual and group approaches to assessment and evaluation, including the following:
 - K7a. Historical perspectives concerning the nature and meaning of assessment;
 - K7b. Basic concepts of standardized and non-standardized testing and other assessment techniques including norm-referenced and criterion-referenced assessment, environmental assessment, performance assessment, individual and group test and inventory methods, behavioral observations, and computer-managed and computer-assisted methods;

- K7c. Statistical concepts, including scales of measurement, measures of central tendency, indices of variability, shapes and types of distributions, and correlations;
- K7d. Reliability (i.e., theory of measurement error, models of reliability, and the use of reliability information);
- K7e. Validity (i.e., evidence of validity, types of validity, and the relationship between reliability and validity);
- K7f. Age, gender, sexual orientation, ethnicity, language, disability, culture, spirituality, and other factors related to the assessment and evaluation of individuals, groups, and specific populations;
- K7g. Strategies for selecting, administering, and interpreting assessment and evaluation instruments and techniques in counseling;
- K7h. An understanding of general principles and methods of case conceptualization, assessment, and/or diagnoses of mental and emotional status; and
- K7i. Ethical and legal considerations.

8. Research and Program Evaluation – studies that provide an understanding of research methods, statistical analysis, needs assessment, and program evaluation, including the following:

- K8a. The importance of research and opportunities and difficulties in conducting research in the counseling profession
- K8e. Use of research to improve counseling effectiveness.