

Introduction to Statistical Analysis

PRE 710
Spring 2003

Instructor: Vicki Peyton, Ph.D.
Lecture: Tuesdays 4:10 – 7:00pm
Classroom: Edwards Campus
Room 324

Office: 646 Joseph R Pearson
Office phone: (785) 864-7087
Email: vpeyton@ku.edu
Office hours: 2:30 – 3:30pm
Wednesdays and Thursdays.
Other times by appointment.

Textbook: Shavelson, R.J. (1996). *Statistical Reasoning for the Behavioral Sciences (3rd edition)*. Boston: Allyn and Bacon.

Suggested Textbook: Akey, T., Green, S.B., & Salkind, N.J. (1999). *Using SPSS for Windows: Analyzing and Understanding Data*. Upper Saddle River: Prentice Hall.

Other readings and texts: other readings will be made available through the course reserve section at the Edwards Campus Library

Supplies: A calculator and access to the statistical package, SPSS, are required. Also, all students are required to have an email account provided by the university.

Course description: Introduction to Statistical Analysis is a non-calculus introductory course in statistical methods. No previous background in statistical methods is necessary to be successful in this course. You **must also enroll concurrently** in the computer lab, PRE 711, which teaches students to use the statistical software program, SPSS.

Introduction to Statistical Analysis introduces the basic concepts of descriptive statistics, probability, and inferential statistics which are necessary for understanding and performing quantitative research in education and related fields. Topics include frequency distributions, graphs, percentiles, percentile ranks, central tendency, variability, normal deviates, sampling, sampling distributions, interval estimation, hypothesis testing, power of statistical tests, t-tests, linear correlation, simple linear regression, and basic chi-square techniques. Quantitative research designs and levels of measurement are discussed as they apply to statistical analyses in this course. Although theoretical concepts underlying statistical methods are discussed where needed, applied data analysis and the interpretation of results are emphasized.

Date (Tentative)	Topic	Chapter
January 21	Introduction Research Design	1 and 2
January 28	Variables Levels of Measurement	1 and 2
February 4	Frequency Distributions	3
February 11	Measures of Central Tendency	4
February 18	Measures of Variability	4
February 25	Normal Distribution	5
March 4	Normal Distribution	5
March 11	Midterm Exam 1	1 thru 5
March 18	Spring Break	
March 25	Correlation	6
April 1	Linear Regression	7
April 8	Midterm Exam 2	6 and 7
April 15	Sampling Inferences About Population Means: Single Samples	8 and 10
April 22	Inferences About Population Means: Two Independent Samples Inferences About Population Means: Two Dependent Samples	8, 10, 11, and 12
April 29	Inferences About Population Means: Estimation Errors in Decision Making	8, 10 and 11
May 6	Power Chi-Square	11 19
May 13	Final Exam	8, 10, 11, 12, and 19

Class Project: Students will design and complete a project including data collection, data entry, analyses, and write a short APA style results section. Students will work together as a class to design the study but will be individually responsible to complete the remainder of the project.

Study Suggestions: It is very important to keep up with the reading and the homework. It is strongly suggested that you work the problems and answer the questions at the end of the textbook chapters. Take home problems will also be assigned. Regular study throughout the semester plus review before

examinations is expected. Computer facilities are available at both the Lawrence and Edwards campus. A pocket calculator with basic mathematical functions is a necessity for this course.

Grades: A criterion-referenced grading model is used us to assign grades for this course. Grades will be based on a combination of tests, take-home assignments, and a final cumulative project. You are expected to attend all classes and take all examinations at the announced time. Late homework may result in a reduced grade.

Grading:

	<u>Weight</u>
Midterm Exam 1	20%
Midterm Exam 2	20%
Final Exam	25%
Take-Home Assignments	20%
Project	15%

Grading scale:

A	92% to 100%
A-	85% to 91%
B+	82% to 84%
B	78% to 81%
B-	75% to 77%
C+	72% to 74%
C	68% to 71%
C-	65% to 67%
D+	62% to 64%
D	58% to 61%
D-	55% to 57%

F will be assigned if a student has a score less than 55%

Any student in this course who has a disability that may prevent him/her from fully demonstrating his/her abilities should contact me personally as soon as possible so we can discuss accommodations necessary to ensure full participation in this course and your college experience.

As a courtesy to fellow classmates, please refrain from bringing cellular phones and beepers to class. If either of these devices is necessary, please program them to a mode of silence or set them to vibrate only.