NAZARENE UNIVERSITY COLLEGE

BHS 310 *Quantitative Methods for the Behavioral Sciences (3-3)*

Winter 2005

Instructor: Alex Sanderson   **Office:** 503
Class Times: T/THR: 9:45 – 11:00   **Office Phone:** 571-2550, ext. 5907
Lab Times: M: 1:00 – 2: 15   **Class Location: RM:** 517
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Course Description

This course is designed to give students a basic understanding of descriptive and inferential statistics. Emphasis is placed on practical application and students will learn to analyze and interpret basic statistical research. They will also learn to use computer software (SPSS 12) to create their own statistical tables and charts. The course will emphasize practical applications and as such, lab time will be spent working on the computer. Students will be required to work in groups of three for all lab work. As part of the course requirements, students will also participate in a group project where they will analyze data and present it in a written assignment.

Course Objectives

1. To have students develop skills in organizing quantitative data;
2. To have students acquire an understanding of the logic for each of several basic statistical techniques;
3. To have students develop skills in computing statistical techniques;
4. To have students understand appropriate applications for these statistics;

Required Texts

Forde, D.R. (2004). *Elementary statistics in social research: The essentials (Workbook for Levin and Fox).* Allyn & Bacon: Boston

Levin, J & Fox, J.A. (2004). *Elementary statistics in social research: The essentials.* Allyn & Bacon: Boston.

Course Schedule

Part I:

Introduction to the Course
The Connection Between Statistics and Research.
Read: Chap. 1
Organizing Data: Distribution and Graphics
Read: Chap. 2
Central Tendency
Read: Chap. 3

EXAM 1 – Handed out Feb 1st and due back on Thursday, Feb 3rd

Part II:

Variability
Read: Chap. 4
Probability and Normal Curve
Read: Chap. 5
Samples and Populations
Read: Chap. 6

EXAM 2 – Thursday, February 24th and due on Tuesday, March 1st

Part III:

Testing Differences Between Means
Read: Chap. 7
Analysis of Variance
Read: Chap. 8
Non-Parametric Tests
Read: Chap. 9 and readings provided by the instructor

EXAM 3 – Thursday, March 24th and due back on Tuesday, March 29th

Part IV:

Parametric Correlation
Read: Chap. 10
Non-Parametric Correlations
Read: Chap. 12
Regression
Read: Chap. 11

EXAM 4 (FINAL) Given out on April 12th and Due on Friday, April 15th

Course Requirements
Students need to be competent using computers and have a good working knowledge of basic mathematics (e.g., fractions, decimals, equations) in order to complete the course successfully. No statistical software experience is expected. Students will need a pocket calculator for homework and exams. If your math skills are a bit rusty, there is a basic

math review in the back of the Levin text. Evaluation will be based on four exams, a written assignment and homework/lab assignments. Students will need a calculator, which can perform Σx, Σx^2, mean, variance and standard deviation.

Written Assignment

This course is designed to provide students with basic statistic skills so that they can apply their knowledge of statistical concepts to 'real life' research and data analysis. This assignment gives you the opportunity to apply the concepts you have learned to an original research paper using a data set collected by the students. With your lab group, you will write a 4-5-page paper using double spaced type (1" margins and no more than 12 inch font) in which you demonstrate your ability to analyze variables and describe and interpret patterns within a data set. You will also need to present and interpret a table and a graph within the body of your paper. We will be discussing formatting (APA style) and different types of data analysis in class. The paper is due on **April 12th.** Please note all members of a group will receive the same mark on their final product

Course Grade

The first mid-term is worth 10%, second mid-term 15%, third mid-term 20%, and the final exam will be worth 25%. The written assignment and the homework/lab assignments will be worth 15% each.

Important Notes

- Last day to enter course without permission and/or voluntarily withdraw from course without financial penalty: January 14th, 2005
- Last day to voluntarily withdraw from course or change to audit without academic penalty: March 11th, 2005.
- It is the responsibility of all students to become familiar with and adhere to NUC Academic Policies, such as the policy on Academic Dishonesty, which are stated in the current Catalogue.