Nazarene
University
College

BHS 260 *Quantitative Methods for Behavioral Science* (3)
Winter 2001

Instructor: Alex Sanderson   **Office:** 5th Floor
Office Hours: T/Th 11:00 – 12:00   **Office Phone:** 571-2550, ext. 235
Class Times: T/Th 2:30 – 3:45   **Home Phone:** 286-6605
Lab: M 9:45-10:45
Email Address: ajsander@ucalgary.ca   **Location:** Room 1

Required Text

Levin, J & Fox, J.A. (2000). Elementary Statistics in Social Research (Eighth Edition). Allyn & Bacon, Boston.

Course Description and Structure

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 10) 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;

Course Requirements

Students need to be competent using computers and have a good working knowledge of basic mathematics (fractions, decimals, equations, etc.) in order to successfully complete the course. 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. The first mid-term is worth 10%, 2nd mid-term 15%, 3rd mid-term 20%, and the final exam will be worth 25%. The writing assignment and the homework/lab assignments will be worth 15% each. Students will need a calculator, which can perform Σx, Σx^2, mean, variance and standard deviation. There's information on calculators at www.hp.com/calculators or www.ti.com/calc.

Course Schedule

Part I:

>>> Introduction to the Course
>>> The Connection Between Statistics and Research.
>>>> Read: Chap. 1, pp. 1-19
>>> Organizing Data: Distribution and Graphics
>>>> Read: Chap. 2, pp. 23-72
>>> Central Tendency
>>>> Read: Chap. 3, pp. 73-95

>> **EXAM 1 - Thurs. January, 25**

Part II:

>>> Variability
>>>> Read: Chap. 4, pp. 96-122
>>> Probability and Normal Curve
>>>> Read: Chap. 5, pp. 123-157
>>> Samples and Populations
>>>> Read: Chap. 6, 158-190

>> **EXAM 2 – Tuesday, February, 20th**

Part III:

>>> Testing Differences Between Means
>>>> Read: Chap. 7, pp. 195-239
>>> Analysis of Variance
>>>> Read: Chap. 8, pp. 240-264
>>> Non-Parametric Tests
>>>> Read: Chap. 9, pp. 265-308

>> **EXAM 3 – Tuesday, March 20th**

Part IV:

> Parametric Correlation
>> Read: Chap. 10, pp. 309-336
> Non-Parametric Correlations
>> Read: Chap. 12, pp. 363-395
> Regression
>> Read: Chap. 11, pp. 337-362
> Statistical Applications
>> Read: Chap. 13, pp. 396-418

EXAM 4 (FINAL) Scheduled by the Registrar

Written Assignment

As we have discussed in class, part of this course is designed to enable students to 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 pre-existing data set (Supplied by professor). You are required to 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 5th. Please note all members of the group will receive the same grade for the completed assignment, with no exceptions

Bonus Course Credits for Research Participation

Students are invited to participate in a departmentally approved research project on attachment. Participation is completely voluntary. Students who participate can earn a 2% credit towards their final grade. Last day to participate in order for the credit to be applied to your marks is April 13th, 2001.