GRANDE PRAIRIE REGIONAL COLLEGE
DEPARTMENT OF ARTS, EDUCATION AND COMMERCE
MANAGEMENT SCIENCE 3010

APPLIED STATISTICS IN ECONOMICS AND BUSINESS

Instructor: Ebby Aslani
Office: C 423
Phone: 539 0614
Office Hrs: M, W, F 12:00 - 1:00
or by appointment

Lecture M W F 11:00 - 11:50
Lab L1 T 15:00 -15:50
Lab L2 T 16:00 - 16:50

Course Objectives:

MG 3010 is an introductory applied statistics in economics and business. the course focuses on data collection and presentation, descriptive statistics. Probability distributions, sampling distributions and the central limit theorem. Point estimation, interval estimation and hypothesis testing. Regression and correlation analysis. Analysis of variance Goodness of fit and contingency table.

Text:

Allen L. Webster, *Applied Statistics for Business & Economics, Second Edition*, Irwin, 1995

Barbara McKinnet, *The Students study Guide*
The Computer Guide for SPSS

Labs:

There is a strong emphasis on the microcomputer and the statistical software, ***SPSS for windows***. This powerful statistical software is available in lab. Students are expected to become familiar with statistical analyses using SPSS . To integrate the computer use into the course, many practice labs and some assignments are planned. Students will work with real economics and business data to familiarize themselves with the use of computer and SPSS for statistical analysis.

Prerequisite:

This is an introductory applied statistics for Commerce and Management students. Mathematical theory is kept to a minimum but MATH. 30 is a prerequisite. Since the course is offered in the second semester, students are normally expected to have completed EC1010 and Math 1130 in the first semester, however these courses are not prerequisites.

Grading: Grade will be assigned on the bases of students performance in three exams and a number of computing assignments. The exams &assignments weights are as follows:

Five Assignments	20%
Exam I	20%
Exam II	20%
Final Exam	40%

Course Outline:

	Text Reading
The Role of Statistics & Some Basic Definitions	Ch. 1
Describing Data sets: Frequency Distributions, Class Intervals & Midpoints cumulative , relative, & Cumulative Relative Frequency Distribution	Ch. 2
Measures of Central Tendency & Dispersion Un-grouped Data, Grouped Data	Ch. 3
Principles of Probability	Ch. 4
Probability Distributions: Discrete random Variable Mathematical Expectation	Ch. 5
The Normal Distribution	Ch. 6
Mid-Term Exam I	
Sampling Distributions: An Introduction to Inferential statistics The Central Limit Theorem The Finite Population Correction Factor Using the Sample Distribution The sampling Distributions for Proportions An Examination of sampling Procedures	Ch. 7
Estimating with Confidence intervals: The Principle of a Confidence Interval The Interpretation of Confidence Intervals The Probability of Error - The Alpha Value Confidence Intervals for the population Mean; Large & Small Sample Confidence Intervals for Population Proportions	Ch. 8

Controlling the Interval Width
Determining the Sample Size
Properties of Good Estimators;
Unbiased, Efficient, Consistent, & sufficient Estimator

Mid-Term Exam II

Hypothesis Testing — Ch. 9
The Principle of Hypothesis Testing
Determination of the Decision Rule
distinguishing between Two-Tailed & One-tailed Tests
A Two-tailed Hypothesis Test for population Mean; Large & Small Sample
One-Tailed Tests for Population Mean, Large & Small Sample
An Alternative Method of Hypothesis Testing; p-value
Type I & Type II Error

Simple Regression& Correlation Analysis — Ch.13
Introduction
The Mechanics of Straight Line
The Basic Objective of Regression Analysis
Ordinary Least Square (OLS); the line of best fit
An Example of Using OLS
Assumption of OLS
A Measure of Goodness-of-Fit; The Standard Error of Estimate
Correlation Analysis
Limitations of Regression Analysis
Interval Estimation in Regression Analysis
Hypothesis Testing about the Population Correlation Coefficient
Testing Inferences about the Population Correlation Coefficient
Analysis of Variance Revisited

Review

Homework:

Problems from the text will be recommended. The list of problems is the minimum the students should do in each section. you will need to do these to find out your understanding of the material. The homework assignments will be given in class as we cover the chapters.