GRANDE PRAIRIE REGIONAL COLLEGE

DEPARTMENT OF ARTS, EDUCATION AND COMMERCE

MANAGEMENT SCIENCE 3120

Instructor:

Ebby Aslani

Lecture A2 M W F 13:00 - 13:50

Office:

C 423

Lab L1 M

15:00 -15:50

Phone: Office Hrs:

539 0614 M. W. F

11:00 - 12:00

or by appointment

Text:

Paul Newbold, Statistics for Business & Economics, Fourth Edition, Prentice Hall, 1995

Labs:

There is a strong emphasis on the microcomputer and the statistical software, SPSS for windows. This 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.

Prerequisite: EC1010 / 1020, Math 1130 or 1140 (Calculus) and MS 3010.

Grading:

The exams have weights of 20 each and term paper has a weight of 20.

Course Outline:

Text Reading

Review: CH. 7, 8, & 9.

Piont Estimate:

CH 7

Unbiased Estimators & Their Efficiency

Choice of Point Estimator

Estimating with Confidence Intervals:

CH. 8

The Principle & The Interpretation of a Confidence Intervals

The Probability of Error - The Alpha Value

Confidence Intervals for the Population Mean; Large & Small sample

Confidence Intervals for Population Proportions

Controlling the Interval Width

Determining the Sample Size

Properties of Good Estimators;

Unbiased, Efficient, Consistent, & Sufficient Estimator

Hypothesis Testing:

CH. 9

The Principle of Hypothesis Testing Determination of Decision Rule

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

EXAM#1

Tests of variance & Analysis of Variance

CH. 15

Testing variance of a Normal Distribution; Chi-Square (Ch. 9 section 9.4 PP 344-347)

Comparing the variance of two Normal Populations

One-way ANOVA; The Completely Randomized design

Two-Way ANOVA

Some Nonparametric Tests

CH. 10

Simple Regression & Correlation

CH 12

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

Assumptions 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

Test inferences about the Population Correlation Coefficient

Analysis of Varianve Revisited

EXAM#2

Multiple Linear Regression

CH. 13

The Multiple Regression Model

Least Square Estimation

Standard Assumptions for Multiple Regression Model

The Gauss-Markov Theorem

The Explanatory Power of a Multiple Regression Wquation

Confidence Intervals & Hypothesis Testsbfor Individual Regression Parameters

Test on Sets of Regression Parameters Prediction

EXAM#3

More on Regression

CH. 14

Model Building Methodology;

Model Spscification, Coefficient Estimation, Verification, Interpretation & Inference

Dummy Variables

Lagged Dependent Variables

Nonlinear Models

Specification Bias

Multicollinearity

Heteroscedasticity

Autocorrelated Errors; Durbin-watson Statistic

Inference Using Two Populations

CH 9

Estimating the Difference between Two-Population Means Confidence Intervals for the Difference between Two Proportions Selectingbthe Proper Sample Size Hypothesis testing Involving Two Population Large & Small Samples A Test for the Difference between Two Proportions

Review

EXAM#4

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.