# Grande Prairie Regional College

## School of Business

### Department: Business Administration and Commerce

COURSE OUTLINE – WINTER 2006

MG 3120 3(3-0-0) UT

## Applied Statistics for Business and Economics II

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| **Instructor** | Sukhvir Sandhu | **Phone** | 539 - 2334 (office) 539 - 9787 (Home) |
| **Office** | E 401 | **E-mail** | SSandhu@gprc.ab.ca |
| **Office Hours** | M & W: 1:30 – 3:00 pm or by appointment | | |

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### Prerequisite(s):

MS3010 or ST1510

### Required Text/Resource Materials:

Berenson, Leviine, Krehbiel, <u>Basic Business Statistics, Tenth Edition</u>, Prentice hall, 2004.
**THE TEXT WILL BE USED EXTESIVELY. A calculator with Stats functions, preferably the Sharp EL-733A. A microcomputer and the statistical software, SPSS for windows, and is available in J131.**

### Description

Statistical inference for variance; statistical inference for the means; proportions and variances from two populations; analysis of variance; non-parametric statistics; joint probability distributions; covariance; correlation and independence; contingency tables; simple linear regression; multiple linear regression; non-linear regression; and time series analysis are topics covered in the course.

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, assignments will be given throughout the semester. At the end of the course, the students should have the skills of data entry, model building, statistical calculation & output, output interpretation.

## Credit /Contact Hours:

This is a 3 credit course with 3 lectures per week. Total 45 hours are assigned for this course. Students are expected to attend all lectures.

## Delivery Modes:

For each topic listed, there will be a classroom lecture/ discussion and a demonstration of related statistical procedures. I will assign relevant textbook readings and problems, review key topic points regularly. Assignments and class tests will be scheduled to test your knowledge, understanding, and application of the material.

Regular classroom attendance is expected. Please do not be late. You should **study** each assigned reading both before and after it is discussed in class; apply your understanding by class participation and solving the required problems; ask questions in the class; come and see me during my office hours or make an appointment to clear up any misunderstandings or uncertainties about material covered in the class; and demonstrate your mastery of the subject matter whenever you get the chance – tests, assignments, and class participation.

For strong understanding of the concepts in this course requires a great commitment of time and team-work. Plan your schedule accordingly. Do not fall behind in the assigned readings and problems because it is difficult to catch up.

## Transferability:

University of Alberta; University of Calgary*; University of Lethbridge;  Athabasca University; Concordia University College; Canadian University College; King's University College*; Augustana University College.

An asterisk* beside any transfer institution indicates important transfer information.  Consult Alberta Transfer Guide.

## Objectives:

To understand the objectives of statistics, the information that it generates, and how the information can be used in students' business careers.

To create an awareness of different types of situations where it can be used to excel and compete in the field of business.

To develop the ability to use computer and computer software(s) in order to present the information in a standard professional format.

## Grading Criteria:

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|---|---|
| Assignments and Quizzes | 20% |
| First Exam | 25% |
| Second Exam | 25% |
| Final Exam | 25% |
| Class participation/attendance | 5% |

## Assignment, Quiz, Test and Exam Policies:

1. Assignments will be handed in at the beginning of class on the due date.
2. Quizzes, tests, and exams will be written as scheduled.
3. Final examinations will be scheduled by the Registrar during the period of the 2nd last week of April, 2006.  **Do not plan any activities during this period.**
4. First Exam and Second exam are tentatively scheduled for 2nd week of February and 3rd week of March.

Grades will be assigned on the Letter Grading System.

**Department of Business and Commerce**

**Grading Conversion Chart**

| Alpha Grade | 4-point Equivalent | Percentage Guidelines | Designation |
|:-----------:|:------------------:|:---------------------:|:-----------:|
| A⁺ | 4 | 90 – 100 | EXCELLENT |
| A | 4 | 85 – 89 | |
| A⁻ | 3.7 | 80 – 84 | FIRST CLASS STANDING |
| B⁺ | 3.3 | 76 – 79 | |
| B | 3 | 73 – 75 | GOOD |
| B⁻ | 2.7 | 70 – 72 | |
| C⁺ | 2.3 | 67 – 69 | SATISFACTORY |
| C | 2 | 64 – 66 | |
| C⁻ | 1.7 | 60 – 63 | |
| D⁺ | 1.3 | 55 – 59 | MINIMAL PASS |
| D | 1 | 50 – 54 | |
| F | 0 | 0 – 49 | FAIL |

## Jan – April 2006 Timetable for Computer Lab in J131

Tuesday:      10:00 to 1:00 pm (CS3010 L1)

              3:30 to 5:30 pm (CS2050 L1)

Wednesday: 9:30 to 11:30 am (CS3010 L1)

Thursday:    2:30 to 4:00 pm (CS3010 A3)

## Course Schedule/Timeline:

Text Chapters 1 through 6 content except Chapter 4 will be reviewed and amplified through the use of computer applications.  Chapter 7 through 14 will be studied in depth through the concept understanding, problem solving, and computer use.

| Week | Topic | Required Reading |
|------|-------|------------------|
| January 4 Week # 1 | Chapter 1 | Overview of Statistics<br>Applying Statistics to Business<br>How this text is organized.<br>The importance of collecting data<br>The sources of data and Types of data<br>Tables and charts for all types of numerical data |
| January 9, 11 Week # 2 | Chapter 2 Chapter 3 | Measures of Central Tendency<br>Descriptive Summary Measures from a Population<br>Exploratory Data Analysis |
| January 16, 18 Week# 3 | Chapter 5 Chapter 6 | The Probability Distribution for a Discrete Random Variable; Binomial distribution; Hyper-geometric distribution; the normal distribution |
| January 23, 25 Week # 4 | Chapter 7 | Sampling Distribution of the Mean<br>Sampling Distribution of the Proportion |
| January 30, February 1 Week # 5 | Chapter 8 | Confidence Interval Estimation of the Mean<br>Confidence Interval Estimation of the Proportion<br>Determining Sample Size<br>**Get ready for the first Exam** |
| February 6, 8 Week # 6 | Chapter 9 | First Exam<br>Fundamentals of Hypothesis Testing One-Sample Tests for the Mean and the Proportion. |
| February 13, 15 Week # 7 | Chapter 10 | Comparing Two Independent Samples<br>F-test for differences in Two Variances |
| February 20-24 Week # 8 | | Reading Week |

| February 27<br>March 1<br>Week# 9 | Chapter 11 | One-Way Analysis of Variance<br>Two-Way Analysis of Variance<br>Non-Parametric Analysis |
|---|---|---|
| March6, 8<br>Week # 10 | Chapter 12 | Tests for Two or More Samples With Categorical Data |
| March 13, 15<br>Week # 11 | Chapter 13 | Simple Linear Regression<br>**Study for the Second Exam** |
| March 20, 22<br>Week # 12 | **Second Exam**<br>Chapter 14 | Introduction to Multiple Regression |
| March 27, 29<br>Week #13 | Chapter 14 | Introduction to Multiple Regression |
| April 3, 5<br>Week # 14 | Chapter 15 | Multiple Regression Model Building |
| April 10, 12<br>Week # 15 | Chapter 16 | Time Series Analysis and Forecasting<br>**Study for the Final Exam** |

**\* The instructor reserves the right to change, or cancel, any of these dates and topics.**