GRANDE PRAIRIE REGIONAL COLLEGE

STATISTICS 1510 B3

Introduction to Applied Statistics
Winter 2003

SCHEDULE : Lecture: ST1510 B3   J203   WF   13:00 - 14:20

Lab :   ST1510 BL1   A313   T   14:30 - 16:20
              ST1510 BL2   A313   R   14:30 - 16:20

INSTRUCTOR : Dr Subhash Karnik, J206, Extn 2093

TEXT: *The Basic Practice of Statistics*, by D.S. Moore, 2nd Edition.
              Excel Manual for Moore's The Basic Practice of Statistics, by Fred
              M. Hoppe

ASSESSMENT: Your final grade will be determined in the following manner:

Assignments/Quizzes	10%	
Lab Reports	20%	
Midterm Exam	20%	Wednesday February 19
Lab Exam	15%	April 7 - 11
Final Exam	35%	TBA

EXAMS: Exams will be closed book. A hand calculator will be necessary.
              The formula sheet and tables as given in the textbook will be coppied
              and be given to you for the exams.

MISSED EXAMS: There is no make-up exam for Midterm .
               Students who miss the Midterm for a valid reason, such as illness,
               will have the weight transferred to the final.

Statistics 1510 is an introductory statistics course focusing on statistical reasoning and data analysis. Mathematical theory is kept to a minimum. Students have access to a computer lab and so are able to work with a variety of data sets. You will be taught in the labs how to use the statistical part of the spreadsheet EXCEL and you will learn how to make proper lab reports.

The following course outline is based on the text *The Basic Practice of Statistics*, by D.S. Moore

PART I	Understanding Data		Chapters 1-3
PART II	Understanding Inference		Chapters 4-8
PART III	Topics in Inference		Chapters 9 - 11
NOTE:	Sections 4.4, 6.4, 7.3 & 10.2 and all of Chapter 12 are omitted.

Chapter	Approximate Lecture Time	Summary
	1.5 hrs	Introduction
1	4.5	Examining Distributions: displaying distributions with graphs, describing distributions with numbers, the normal distribution.
2	4.5	Examining Relationships: scatterplots, correlation, least-squares regression, caution about regression and correlation, relations in categorical data.
3	3	Producing data: designing samples, designing experiments.
4	3	Probability and Sampling Distributions: randomness, probability models, sampling distributions.
5	3	Probability Theory: general probability rules, the binomial distribution, conditional probability.
6	3	Introduction to Inference: Estimating with confidence, tests of significance, making sense of statistical significance.
7	3	Inference for Distributions: Inference for the mean of a polulation, comparing two means.
8	3	Inference for Proportion: inference for a population proportion, comparing two proportions.
11	3	Inference for Regression: inference about the model, inference about prediction, checking assumptions.
9	3	Inference for Two-Way Tables: two-way tables, the Chi-Square test.
10	1.5	Analysis of variance: the analysis of variance F-test.
Total	36	

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The Computer Labs in Statistics 1510 are designed so that you can gain experience working with realistic data sets, familiarize yourself with the use of a computer for statistical analysis, and to help you understand the course material.

This term we are using a spreadsheet software package in the labs, Microsoft EXCEL, instead of a dedicated statistics program.

EXCEL has advantages and disadvantages. The advantages are obvious; it is a popular program that many of you already have on a home computer, it is fairly easy to learn, and it is a common tool in business, in industry, and in home environments. It can also be used as a word processing package.

The disadvantages are less obvious. It is not as statistically powerful (and in some cases not as easy to use) as software specifically designed for statistical analysis. When professional statisticians are brought data in EXCEL format for consulting work, they will convert it so that it can be analyzed in a dedicated system. If you wish to be a statistician you will take further statistics courses which use dedicated statistics packages.

There are some (elementary) statistical routines that EXCEL cannot do for you. No software package is perfect.

Completing Labs:

There are many computer rooms throughout the college, third floor A-wing, J101, J131 and the Library, that are open daily and have EXCEL on them. Schedules of when each lab is available for general use is on the doors.

You must attend all labs as scheduled and you will complete the lab assignment and submit it during the scheduled time.

You will need one 3 ½ disk to save your work from week to week. Some later labs use data from earlier labs.

Submitting Lab Reports:

Lab Reports are to be submitted at the completion of the lab.
Lab Reports must be in printed form. Remember to keep a back-up in either print or disk format.

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Lab Topics:

There are 10 scheduled lab periods this term. Formal Lab Reports are to be submitted for grading for Labs 2 through 9.

Week ending:

Jan. 17	Lab 1	Introduction to Excel and Excel Add-Ins
Jan. 23	Lab 2	Formatting Output and Frequency Distributions
Jan. 31	Lab 3	Data Descriptions
Feb. 6	Lab 4	Approximate normality checks
Feb. 13	Lab 5	Correlation and Least-Squares Regression
Mar. 7	Lab 6	Time Series and Sampling Distributions
Mar. 14	Lab 7	Correlation and Sampling Distributions
Mar. 21	Lab 8	Confidence Intervals and Hypothesis Testing
Mar. 28	Lab 9	Linear Regression I
Apr. 4	Lab 10	Linear Regression II
Apr. 11	Lab 11	Lab Exam

Due Dates and Times

Lab Reports are to be submitted at the end of the lab period.

NO LATE LABS WILL BE ACCEPTED.

FORMAT OF LABS:

1 Lab reports will include complete answers to the questions.

2 Questions are to appear in order. It is your responsibility to format your pages so as to present a properly written report. Number all questions and label your answers so that they can be easily identified.

3 **Each page** will have a header which will include your name, ID number, date, course and section, and lab number and title. This header must be in BOLD and LARGER FONT.

4 All pages must be stapled together (paper clips, folded corners, etc., are not acceptable).

5 Each lab report must have exact number of pages as explained by the instructor.

6 Students can lose up to 25 % of the total mark for the lab for lack of appropriate format – **even if the answers are correct.**