STATISTICS 1510 A3/B3/C3

JAN 18 2001

Introduction to Applied Statistics
Winter 2001

Grande Prairie Regional College

ROOM:	Lecture:	ST1510 A3	J 228	MW	8:30 - 9:50
		ST1510 B3	A314	MW	8:30 - 9:50
		ST1510 C3	J203	TH	10:00 – 11:20
	Lab:	ST1510 AL1	A313	Tues	14:30 - 16:20
		ST1510 AL2	A312	Fri	8:30 - 10:20
		ST1510 BL1	A312	Tues	14:30 - 16:20
		ST1510 BL2	J101	Fri	8:30 - 10:20
		ST1510 CL1	A313	Mon	14:30 - 16:20
		ST1510 CL2	A313	Wed	14:30 - 16:20

INSTRUCTORS: Dr. Eric Chislett, C409, ph. 2003
Mr. Tom Kaip, J212, ph. 2963
Dr. Subhash Karnik, J206, ph. 2093

TEXT: ***The Basic Practice of Statistics***, by D.S. Moore, 2nd Edition.
Data Analysis using Excel, by Michael Middleton

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

Assignments	10%	
Lab Reports	20%	
Term Exam #1	25%	Wed/Thur. Feb. 21/22
Lab Exam	20%	April 2-7
Term Exam #2	25%	Wed/Thur. April 11/12

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 term exam #1 or the lab exam. Students who miss them for a valid reason, such as illness, will have the weight transferred to term exam #2. Students who miss term exam #2 must apply for a deferred exam through the registrars office

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INTRODUCTION
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Statistics 1510 is an introductory statistics course focusing on statistical reasoning and data analyses. 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, 5.3, 6.4, 7.3 & 10.2 and all of Chapter 12 are omitted.	

Chapter	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.
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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HOMEWORK ASSIGNMENTS
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There are 11 homework assignments for this course. The assignments are given below, with the first 10 being problems from the text and the number 11 attached. Most assignments are to be done using Excel and most of the data sets are contained on the CD in the back of your text. Assignments are due at noon on Thursdays on the day indicated.

NO LATE ASSIGNMENTS WILL BE ACCEPTED.

Solutions to the assignments will be posted on the second floor, J-wing on the Monday following the due date.

FORMAT OF ASSIGNMENTS:

1. The first page will contain ONLY your name, I.D., Course no & section, Assignment no., Date, and Instructors name.
2. Questions must be submitted in the same order as listed.
3. All pages must be stapled together. (paper clips, folded corners, etc, are not acceptable)
4. All graphs must have titles and have axis properly labeled.
5. All assignments, except #1, are to be presented in EXCEL. Some of the calculations need not be done in Excel.

ASSIGNMENT SCHEDULE:

No.	Due Date	Assigned problems (from the text)
1	Jan 11	1.21, 1.28
2	Jan 18	1.80, 1.82 (in 1.82 use the data from 1.80 instead of that from 1.81)
3	Jan 25	2.14
4	Feb 1	2.92, 3.24 (complete 3.24 twice, as per the text and using excel with seed 1001 and explain your method)
5	Feb 8	4.30, 4.36
6	Feb 15	5.34, 5.38
7	Mar 8	6.20, 6.35
8	Mar 15	7.44
9	Mar 22	8.22, 8.40 (calculator)
10	Mar 29	11.24 (in d, examine using a scatterplot)
11	Apr 5	Attached
12	Apr 12	Possible review assignment

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LABORATORY PROJECTS
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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 11 scheduled lab periods this term. Formal Lab Reports are to be submitted for Labs 2 through 9.

Week ending:		
Jan. 12	Lab 1	Introduction to Excel and Excel Add-Ins
Jan. 19	Lab 2	Formatting Output and Frequency Distributions
Jan. 26	Lab 3	Data Descriptions
Feb. 2	Lab 4	Approximate normality checks
Feb. 9	Lab 5	Correlation and Least-Squares Regression
Feb. 16	Lab 6	Time Series and Sampling Distributions
Mar. 9	Lab 7	Correlation and Sampling Distributions
Mar. 16	Lab 8	Confidence Intervals and Hypothesis Testing
Mar. 23	Lab 9	Linear Regression
Mar. 30	Lab 10	Possible review Lab
Apr. 6	Lab 11	Lab Exam

Due Dates and Times

Lab Reports are to be submitted at the end of the lab period. For Lab #1 marks will be assigned as the work is completed on the computer. The first report to be submitted is for Lab #2, due the week ending Friday, Jan. 19.

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. Label all answers as you would if you were hand-writing the submission. (Number all questions and label your answers so that they can be easily identified.)
3. Each page will have a heading 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, as per the sample of Lab #2.
4. All pages must be stapled together (paper clips, folded corners, etc., are not acceptable). All reports should be two or three pages long.
5. A sample lab report, for Lab #2, will be available in the second lab session.