STATISTICS 1510 A3/B3/C3

JAN. 29 2002

Introduction to Applied Statistics
Winter 2002

Grande Prairie Regional College

ROOM:	Lecture:	ST1510 A3	J 202	TR	8:30 - 9:50
		ST1510 B3	J203	~~M~~WF	13:00 - 14:20
		ST1510 C3	J202	MW	13:00 - 14:20
	Lab:	ST1510 AL1	A313	~~Tues~~ Wed	14:30 - 16:20
		ST1510 AL2	J101	Fri	8:00 - 9:50
		ST1510 BL1	A313	Tues	14:30 - 16:20
		ST1510 BL2	A313	Thur	14:30 - 16:20
		ST1510 CL1	A312	Tues	14:30 - 16:20
		ST1510 CL2	A312	Thur	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.

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

Assignments	10%
Lab Reports	15%
Mid Term Exam	20%
Lab Exam	20%
Final Exam	35%

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

MISSED EXAMS: There is no make-up exam for mid term or the lab exam. Students who miss them for a valid reason, such as illness, will have the weight transferred to the final exam. A written letter with supporting documentation must be submitted within one week of the exam date. Students who miss the final 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 analysis. Mathematical theory is kept to a minimum. Students have access to a computer & 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, and 7.3 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	3	Analysis of variance: the analysis of variance F-test, including completion of the ANOVA table.
Total	37.5	

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ASSIGNMENTS and QUIZZES
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There are 7 assignments and 5 quizzes for this course. Assignments will be given out in class one week in advance of the due date. Assignments are due at before class on thursdays or fridays of the week indicated. Quizzes will usually be given on the alternate Thursdays or fridays

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.	Week ending	
A1	Jan 11	
Q1	Jan 18	
A2	Jan 25	
Q2	Feb 1	
A3	Feb 8	
Q3	Feb 15	
A4	Mar 8	
Q4	Mar15	
A5	Mar 22	
Q5	Mar 29	
A6	Apr 5	χ^2- tests
A7	Apr 12	ANOVA

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RECOMMENDED PROBLEMS
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It is recommended that for a comprehensive understanding of the content of this course that you complete a sufficient number of problems other than those which you are asked to complete and hand in for grading. If you have difficulty understanding or completing any of these problems please see your instructor.
These problems are not to be handed in.

1.67, 1.69, 1.71, 1.75, 1.77, 1.89

2.43, 2.45, 2.47, 2.49, 2.83, 2.85

3.49, 3.51, 3.53, 3.55, 3.57, 3.67

4.30, 4.31, 4.34, 4.49, 4.51, 4.53

5.33, 5.35, 5.39

6.75, 6.77

7.59, 7.61, 7.63, 7.65, 7.66
(the answer to 7.66 c is NO because 910 is not in the confidence interval.)

8.43, 8.45, 8.47

11.16, 11.17, 11.18, 11.19

9.11, 9.13, 9.25

10.15, 10.16, 10.17

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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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LABORATORY PROJECTS
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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. 11	Lab 1 Introduction to Excel and Excel Add-Ins
Jan. 18	Lab 2 Formatting Output and Frequency Distributions
Jan. 25	Lab 3 Data Descriptions
Feb. 1	Lab 4 Correlation and Least-Squares Regression
Feb. 8	Lab 5 Time Series and Sampling Distributions
Feb. 15	Lab 6 Sampling Distributions
Mar. 8	Lab 7 Confidence Intervals
Mar. 15	Lab 8 Probability and Tests of Significance
Mar. 22	Lab 9 Linear Regression
Apr 5	Lab 10 Review Lab
Apr. 12	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. 18.

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.