STATISTICS 1510 A3/B3/C3/D3

Introduction to Applied Statistics
Winter 1999

Grande Prairie Regional College

ROOMS/TIMES:	Lecture.	ST1510 A3	J 226	MWF	14:00 - 14:50
		ST1510 B3	J 203	MWF	12:00 - 12:50
		ST1510 C3	J 226	MWF	10:00 - 11:50
		ST1510 D3	J227	TT	8:00 - 9:20
	Lab:	ST1510 AL1	A312	Mon.	16:00 - 17:50
		ST1510 AL2	A312	Tues.	15:00 - 16:50
		ST1510 BL1	J 101	Tues.	8:00 - 9:50
		ST1510 BL2	J 101	Thur.	8:00 - 9:50
		ST1510 CL1	A312	Fri.	15:00 - 16:50
		ST1510 CL2	J 101	Wed.	15.00 – 16:50
		ST1510 DL1			

INSTRUCTORS: Dr. Eric Chislett, C409, ph. 2003
Mr. Tom Kaip, J212, ph. 2963
Ms. Dallas Sawtell, H227, ph. 2989

TEXT: ***The Basic Practice of Statistics***, by D.S. Moore
Study Guide for Moore's ***The Basic Practice of Statistics***
Statistical Explorations with Excel, by Lehman and Zeitz

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

Assignments	10%	
Lab Reports	20%	
Midterm Exam	20%	1 hr., Wed., Feb., 17
Lab Exam	20%	1 hr., April 12 – 16
Final Exam	30%	2 hrs.

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 during exams.

MISSED EXAMS: There is no make-up exam for the midterm or lab exam. Students who miss them for a valid reason, such as illness, will have the weight transferred to the Final Exam. Students who miss the Final Exam must apply for a deferred exam through the registrars office.

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 4-7
PART III	Topics in Inference	Chapters 8-10
NOTE:	Sections 4.6, 5.4 & 6.3 are omitted.	

Chapter	Approximate Lecture Time	Summary
	1 hr	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, interpreting regression and correlation, relations in categorical data.
3	3	Producing data: designing samples, designing experiments.
4	5	Sampling Distributions and Probability: sampling distributions, probability distributions, sample proportions, the binomial distributions, sample means.
5	3	Introduction to Inference: Estimating with confidence, tests of significance, using significance tests.
6	4	Inference for Distributions: Inference for the mean of a polulation, comparing two means.
7	4	Inference for Proportion: inference for a population proportion, comparing two proportions.
10	3	Inference for Regression: inference about the model inference about prediction, checking assumptions.
8	2	Inference for Two-Way Tables: two-way tables, the Chi-Square test.
9	4	One-Way Analysis of Variance: Comparing several means.
Total	38	

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HOMEWORK ASSIGNMENTS
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There are 11 homework assignments for this course (only your best 10 will be counted). Assignments are given below, with the first 10 being problems from the text and the number 11 attached. They are due on Fridays as indicated.

NO LATE ASSIGNMENTS WILL BE ACCEPTED.

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

FORMAT OF ASSIGNMENTS:

5. The first page will contain **ONLY** your Name, I.D., Course no. & Section, Assignment no., Date, and Instructors Name.
6. Questions must be submitted in the same order as listed.
7. All pages must be **stapled** together. (paper clips, folded corners, etc. are not acceptable)
8. Use a **ruler** when constructing graphs and tables, and label axes of graphs.

ASSIGNMENT SCHEDULE:

No.	Due Date	Assigned problems (from text)
1	Jan 15	1.16, 1.66
2	Jan 22	1.50, 1.56
3	Jan 29	2.12, 2.42
4	Feb 5	3.18, 3.24
5	Feb 12	4.24, 4.40
6	Mar 5	4.42, 4.68
7	Mar 12	5.12, 5.38
8	Mar 19	6.24, 6.62
9	Mar 26	7.8, 7.16
10	Apr 1	7.28, 10.22 (for d, plot the residuals)
11	Apr 9	Will be handed out in class.

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RECOMMENDED PROBLEMS
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Because the Study Guide for Moore's textbook is now included with the text itself, it is not necessary to assign specific problems for you to complete. Rather the Study Guide contains detailed solutions to many problems and you are recommended to complete as many as possible or almost all of these problems. If you have problems with or want solutions to any of the other problems please see your instructor.

Do not assume that completing the problems assigned to be handed in for grading will be sufficient for understanding the material in this course and successfully completing the course.

Please note that there are no assignment questions to be completed and handed in from the last chapter that we do, chapter 9.

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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, 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 when scheduled and you will normally complete 80% - 100% of the lab assignment during the scheduled time.

You will need one 3 ½ disk to save your work from day to day.

Submitting Lab Reports:

Lab Reports are to be submitted at the completion of the lab or by the Friday of that week. (The one exception to this rule is for Lab CL1 which because it is held on Fridays need not be submitted until the following Monday)

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 grading for Labs 3 through 10.

Jan. 11-15	Lab 1 Introduction to Excel and Excel Add-Ins
Jan. 18-22	Lab 2 Formatting Output and Frequency Distributions
Jan. 25-29	Lab 3 Data Descriptions
Feb. 1 - 5	Lab 4 Linear Regression and Correlation
Feb. 8 - 12	Lab 5 Time Series and Logrithmic Trends
Mar. 1 - 5	Lab 6 Sampling Distributions
Mar. 8 – 12	Lab 7 Confidence Intervals
Mar. 15 - 19	Lab 8 Probabilities and Tests of Significance
Mar. 22-26	Lab 9 Linear Regression I
Apr. 5 - 9	Lab 10 Linear Regression II
Apr. 12-16	Lab 11 Lab Exam

Due Dates and Times

Lab Reports are to be submitted at the end of the lab period or before Firday of that week. The first report to be submitted is due the week ending Friday, Jan. 29.

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 given in the second lab session.