STATISTICS 1510 A3/B3/C3

Introduction to Applied Statistics
Winter 1998

Grande Prairie Regional College

ROOM:	Lecture:	ST1510 A3	J 226	MWF	14:00 - 14:50
		ST1510 B3	J 203	MWF	12:00 - 12:50
		ST1510 C3	J 202	MWF	8:00 - 8:50
	Lab:	ST1510 AL1	A305	Mon.	15:00 - 16:50
		ST1510 AL2	A305	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	A305	Fri.	15:00 - 16:50

INSTRUCTORS: Dr. Eric Chislett, C409, ph. 2963
Mr. Tom Kaip, J212, ph. 2003

TEXT: ***Introduction to the Practice of Statistics***, Second Edition by D.S. Moore and G.P.McCabe.

Data Analysis Using Excel, by M.R. Middleton

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

Assignments	15%	
Lab Reports	10%	
Midterm Exam	20%	Wed., Feb. 18
Lab Exam	15%	~~Fri. Thur., Mar. 3 - Mar. 9~~ Mon - Thur Apr 6 - Apr 9
Final Exam	40%	

EXAMS: Exams will be closed book. A hand calculator will be necessary. A formula sheet will be provided for the midterm and final 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. 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 assess 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 Introduction to the Practice of Statistics, second edition, by Moore and McCabe:

PART I	Looking at data & producing data	Chapters 1-3
PART II	Introduction to Probability & Statistics	Chapters 4-6
PART III	Basic applications of statistical inference	Chapters 7-9
NOTE:	Sections 2.3, 5.3, 9.2, are omitted.	

Chapter	Approximate Lecture Time	Summary
1	4.5 hrs	Looking at data: distributions. Graphical displays, summary statistics, normal distribution.
2	4.5	Looking at data: relationships, scatterplots, least squares regression, correlation, two-way tables, causation.
3	3	Producing data: design of experiments, sampling, randomization.
4	5	Probability: the study of randomness, probability models, random variables, means and variances, conditional probability.
5	3	From probability to inference. Counts and proportions, sample means.
6	4	Introduction to inference, confidence intervals, tests of significance.
7	4	Inference for distributions, One-sample and two-sample t procedures.
9	4	Simple linear regression, Inference for regression.
8	3	Inference for count data, one and two proportions, two-way tables.
Total	35	

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HOMEWORK ASSIGNMENTS
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There are 10 homework assignments for this course. These assignments will be given out in class on Fridays and will be due the following Thursday.

NO LATE ASSIGNMENTS WILL BE ACCEPTED.

Solutions to these assignments will be posted on the second floor, J-wing.

FORMAT OF ASSIGNMENTS:

1. The first page will contain ONLY your name and I.D., Course no. and 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. Use a ruler when constructing graphs and tables, and label axes of graphs.

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RECOMMENDED PROBLEMS
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The set of problems on the next page is from the textbook "Introduction to the Practice of Statistics" by Moore and McCabe. It is strongly suggested that you complete these problems as we progress through the course in addition to the homework problems that are to be handed in for grading. The solutions to these recommended problems will be posted on the second floor of J-wing at the completion of the particular chapter.

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RECOMMENDED PROBLEMS
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Chapter 1:

1.	page 26	No. 1.20
2.	page 28	No. 1.26
3.	page 53	No. 1.48
4.	page 55	No. 1.56
5.	page 80	No. 1.76
6.	page 80	No. 1.78
7.	page 83	No. 1.94
8.	page 83	No. 1.95
9.	page 89	No. 1.111
10.	page 89	No. 1.112

Chapter 2:

1.	page 139	No. 2.24
2.	page 139	No. 2.26
3.	page 159	No. 2.43
4.	page 177	No. 2.48
5.	page 181	No. 2.64
6.	page 195	No. 2.78

Chapter 3:

1.	page 274	No. 3.68

Chapter 4:

1.	page 301	No. 4.12
2.	page 303	No. 4.20
3.	page 304	No. 4.28
4.	page 305	No. 4.30
5.	page 320	No. 4.42
6.	page 339	No. 4.65
7.	page 340	No. 4.66
8.	page 357	No. 4.76

Chapter 5:

1.	page 388	No. 5.6
2.	page 389	No. 5.10
3.	page 391	No. 5.20
4.	page 403	No. 5.28
5.	page 405	No. 5.34
6.	page 407	No. 5.46

Chapter 6:

1.	page 442	No. 6.2
2.	page 443	No. 6.6
3.	page 443	No. 6.8
4.	page 445	No. 6.16
5.	page 446	No. 6.20
6.	page 467	No. 6.28
7.	page 469	No. 6.32
8.	page 471	No. 6.42

Chapter 7:

1.	page 520	No. 7.8
2.	page 521	No. 7.10
3.	page 524	No. 7.20
4.	page 528	No. 7.32
5.	page 549	No. 7.38
6.	page 553	No. 7.48

Chapter 8:

1.	page 588	No. 8.14
2.	page 589	No. 8.18
3.	page 598	No. 8.30

Chapter 9:

1.	Page 679	No 9.8
2.	Page 679	No 9.9
3.	Page 679	No 9.10
4.	Page 684	No 9.26

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LABORATORY ASSIGNMENTS
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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.

Please do not use Windows 97, which is in Room A312.

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:

Completed labs are to be submitted to the instructor or his office as follows:

AL1, AL2, on Thursdays of the week of the Lab.
BL1, BL2, on Mondays of the week following the Lab.
CL1, on Thursdays of the week following the Lab.

Lab Reports must be in printed form. Remember to keep a back-up of either print or disk format.

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Lab Topics:

There are 11 scheduled lab periods this term. There will be 9 formal lab reports to be submitted.

This term due to the starting and ending of classes and to Good Friday, the Lab week runs from Friday to Thursday.

Jan 9 - 15	Introduction to Excel and the Data Analysis Tool-Pack
Jan 16 - 22	Lab 1 Formatting Output and Frequency Distributions
Jan 23 - 29	Lab 2 Data Descriptions
Jan30 - Feb5	Lab 3 Normal Quantile Plots
Feb 6 - 12	Lab 4 Linear Regression and Correlation
Feb13 - Mar5	Lab 5 Time Series and Sampling Distributions
Mar 6 - 12	Lab 6 Correlation and Sampling Distributions
Mar 13 - 19	Lab 7 Confidence Intervals and Hypothesis Testing
Mar 20 - 26	Lab 8 Linear Regression I
Mar27 - Apr2	Lab 9 Linear Regression II
Apr 3 - 9	Lab Exam

Due Dates and Times

Lab Reports are to be submitted to your lab as per the schedule on the previous page.

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 attached sample.
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 is attached.