

# STATISTICS 1510 A2/B2

Introduction to Applied Statistics  
Fall 2001

SEP. 10 2002

## Grande Prairie Regional College

ROOM:                      Lecture:      ST1510 A2    J 228    TT      8:30 - 9:50  
   ST1510 B2    J 204    TT      8:30 - 9:50  
   Lab:        ST1510 AL1   J 101    Mon    8:00 - 9:50  
   ST1510 AL2   A305    Mon    14:30 - 16:20  
   ST1510 BL1   J 131    Mon    8:00 - 9:50  
   ST1510 BL2   A307    Mon    14:30 - 16:20

INSTRUCTORS:      Dr. Eric Chislett, C409, ph. 2003  
   Ms. Dallas Sawtell, C204, ph. 2989

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

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

Assignments & Quizzes	10%	
Lab Reports	20%	
Term Exam #1	20%	Thur. Oct. 25
Lab Exam	20%	Mon. Dec. 3
Term Exam #2	30%	As per the Registrar's office

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 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.

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	Approximate Lecture Time	Summary
1	1.5 hrs 4.5	<u>Introduction</u> <u>Examining Distributions</u> : displaying distributions with graphs, describing distributions with numbers, the normal distribution.
2	4.5	<u>Examining Relationships</u> : scatterplots, correlation, least-squares regression, caution about regression and correlation, relations in categorical data.
3	3	<u>Producing data</u> : designing samples, designing experiments.
4	3	<u>Probability and Sampling Distributions</u> : randomness, probability models, sampling distributions.
5	3	<u>Probability Theory</u> : general probability rules, the binomial distribution, conditional probability.
6	3	<u>Introduction to Inference</u> : Estimating with confidence, tests of significance, making sense of statistical significance.
7	3	<u>Inference for Distributions</u> : Inference for the mean of a population, comparing two means.
11	3	<u>Inference for Regression</u> : inference about the model, inference about prediction, checking assumptions.
8	3	<u>Inference for Proportion</u> : inference for a population proportion, comparing two proportions.
9	2	<u>Inference for Two-Way Tables</u> : two-way tables, the Chi-Square test.
10	2.5	<u>Analysis of variance</u> : the analysis of variance F-test.
Total	36	

**STATISTICS 1510 A2/B2**  
**ASSIGNMENTS and QUIZZES**  
**Fall 2001**

There are 7 homework assignments and 5 quizzes for this course. The assignments are given below and unless otherwise indicated are from the text. 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. The Assignments are due at noon 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 following the due date.

**ASSIGNMENT AND QUIZ SCHEDULE**

A1	Sept 13	1.20, 1.21 (by hand)
Q1	Sept 20	
A2	Sept 27	2.12, 2.94 (in Excel)
Q2	Oct 4	
A3	Oct 11	4.34, 4.36 (by hand)
Q3	Oct 18	
A4	Oct 26*	6.20, 6.35
Q4	Nov 1	
A5	Nov 8	8.16, 8.38 (by hand)
Q5	Nov 15	
A6	Nov 22	11.24 (in Excel) (in d, examine using a scatterplot)
A7	Nov 29	Attached

**STATISTICS 1510 A2/B2**  
**LABORATORY PROJECTS**  
**Fall 2001**

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 1/2 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 grading for Labs 2 through 9.

Date:

Sept. 10	Lab 1	Introduction to Excel and Excel Add-Ins
Sept. 17	Lab 2	Formatting Output and Frequency Distributions
Sept. 24	Lab 3	Data Descriptions
Oct. 1	Lab 4	Correlation and Least-Squares Regression
Oct. 15	Lab 5	Time Series and Sampling Distributions
Oct. 22	Lab 6	Sampling Distributions
Nov. 29	Lab 7	Confidence Intervals
Nov. 5	Lab 8	Probabilities and Tests of Significance
Nov. 19	Lab 9	Linear Regression
Dec. 26	Lab 10	Review Lab
Dec. 3	Lab 11	Lab Exam

**Due Dates and Times**

Lab Reports are to be submitted at the end of the lab period. The first report will be complete on Sept. 17.

**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.