MA 2611   Applied Statistics I   B '01

Instructor: **J. D. Petruccelli**

Stratton 105C

831-5362

jdp@wpi.edu

Office Hours: M, Tu, 1-2, Th, 3-5, or by appointment

Teaching Assistants: **Yongmei Chen**

Stratton 204

831-5546

yongmei@wpi.edu

Office Hours: M, 10-12, F, 11-12, 1-2[1]

Ning Liu

Stratton 204

831-5546

ningliu@wpi.edu

Office Hours: W,4-5, F 8-11

1 Overview of the Course

MA 2611 is an introduction to applied statistics. Topics covered include data analysis, data production, statistical models, estimation, and prediction.

2 Textbook

Petruccelli, Nandram and Chen, **Applied Statistics for Engineers and Scientists**, 1999, Prentice Hall.

3 On the Web

The course web site is found at *http://www.math.wpi.edu/Course_Materials/MA2611B01/main.html*. Among the resources you will find there are:

- The document you are now reading.

- The course syllabus.

- My class lecture notes.

- Homework solutions.

- Links to sites relevant to your study of statistics.

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[1] Yongmei's Friday office hours will be held in KH 207

4 Computers

The course will make use of the workstations on campus, or of terminals or PCs which can emulate workstation displays. In order to use these, you must have a CCC Unix computer account, which you will have been given when you registered. In the unlikely event that you do not have a Unix account, or if you have difficulty with your account, inquire at the I/O desk at CCC in Fuller Labs.

The document found on the WPI web pages at URL

http://www.math.wpi.edu/Course_Materials/SAS/sas01_intro.html

contains links to introductions to the WPI computing environment. This document also contains a tutorial for the SAS statistical software you will be using in the course. **You are expected to go through this tutorial, either on your own, or during a portion of the first lab (on October 31 or November 5).**

In addition to allowing you to use SAS and to access the SAS tutorial, the CCC Unix computer account will enable you to use electronic mail (email) to communicate with fellow students, your TA and instructor (our email addresses are on the first page of this document).

5 Labs

Each chapter has one or more labs, at least one of which will be required. There are two types of labs: computer-based and hands-on.

- Computer-based labs sometimes use computer simulation to answer "what if?" questions, such as "What if we add large outliers to an x-y data set: does least squares estimation still work well?" Other computer-based labs use the power of computer simulation and computer graphics to give you a deeper understanding of statistical ideas and methods.

- Hands-on labs are intended to give you insight into the statistical ideas you are studying by having you generate data by hand and then providing activities using that data to illustrate those ideas.

Each chapter has alloted a two hour lab period, but the labs may have to be finished outside of class. Some labs are meant to be done by a group, and some are meant to be done by individuals. A lab report is required for each lab. This report may be done by a student group of no more than 5 students (even if the lab is not a group lab). Some individuals prefer to submit individual lab reports, however (even if the lab is a group lab). Either way is acceptable.

6 Performance Measures

Several performance measures are used in the course. This section describes each measure and what is expected of you for each.

6.1 Tests

There will be two open book, open note tests, based on the chapters you have completed: the first is on Chapters 1-3, and the second on Chapters 1-5. These are individual (not group) exams and involve problem solving, statistical reasoning and the analysis of data. The purposes of tests in this course are:

- To obtain an individual measure of your understanding of statistical ideas.

- To obtain an individual measure of your ability to apply statistics.

- To provide an incentive for you to review the material.

6.2 Labs

Each lab requires a lab report. This report may be completed either by an individual or a group. Each lab report must be typed and must clearly state the name(s) of the individual(s) who is(are) submitting it. All individuals submitting a lab report will get the same grade. A sample lab report is posted at the course web site. **The lab report must be completed in the format used in the sample lab report.**

There are two purposes for a lab report:

- To show that you have done the lab, and that you understand the ideas the lab was designed to demonstrate.

- To help you develop written communication skills.

Lab reports must be neat: a first illegible lab report will be returned for rewriting; any subsequent illegible lab reports will be given a grade of 0. Any individually submitted lab reports which show evidence of collaboration will receive a grade of 0 (if you want to collaborate submit it as a group lab report).

6.3 Homework

Homework is assigned for your benefit and practice. To provide motivation, homework will be collected and selected problems graded. Solutions will be posted. If you have difficulty doing the homework, seek help from the TA or the instructor. It is your responsibility to see that you understand the principles and ideas behind the homework exercises.

7 Grading

Grades will be assigned as follows:

Activity	Percent of Term Grade
Homework	10
Lab Reports	30
Test 1	20
Test 2	40

8 Late Assignments

Unless different arrangements have been made with me ahead of time, late assignments will receive a grade of 0.

9 Makeups

Makeups will be given only in the event of serious illness or other extraordinary circumstances.

10 General Expectations

10.1 My Job and Your Job

Teaching and learning statistics takes work. For my part, the work is in delivering lectures that summarize the main points of the material, in designing appropriate learning activities and methods of evaluation, in grading and providing feedback on those evaluations, and in giving help to students who seek it. For your part, the work is in doing the assigned reading, participating in all course activities, studying the material, and seeking answers to points you don't understand.

In particular, you need to realize that (1) I do not have time to cover everything in lectures, (2) you are responsible for all material assigned in the readings, whether covered in class or not, and (3) that it is up to you to obtain an understanding of the material by studying and seeking clarification of those things you do not understand.

10.2   What Kind of Time Commitment is Expected of You

Over twenty years ago, when the WPI Plan was conceived, it was decided to require full time students to take only three courses at a time (at other schools four or five are a full load). The rationale was that students should be more responsible for their own learning, and therefore should put in the time required to be full time learners outside of class. The figure quoted was that students should spend (on average) seventeen hours per course.

I feel that seventeen hours is a fair figure for students taking only three courses, and I expect you to put in that amount in MA 2611, on average. (By "on average" I mean a class-wide average. Some of you are fast learners and will average less than seventeen hours per week; some of you are slow learners and will average more.)

11   Academic Honesty

Sometimes students submit work that is not their own. While I cannot catch every instance of cheating, some steps have been taken to discourage it. When you run the setup program sasetupa or sasetupb, you configure SAS to print the date and your user id whenever you print any SAS graph or anything from SAS/INSIGHT. **An appropriate date and user id is required for all such output you submit.**

What this means is that for individually-submitted work, such as homework and individually-submitted labs, the id must be yours and the date must be feasible. For work submitted as a group, the id must belong to one of the group members and the date must be feasible.

If you submit output with no date or id on it, you will have to redo the affected work. If you submit output with someone else's id or an inappropriate date, you will receive a 0 for the affected work.