1 Overview of the Course

This is the second of a two-course sequence on probability, statistics and data analysis. The course will cover chapters 6-9 of the text.

2 Textbook

Petruccelli, Nandram and Chen, *Applied Statistics for Engineers and Scientists*, 1999, Prentice Hall. The lecture notes I use in class will be found online at

http://www.math.wpi.edu/Course_Materials/MA2612B03/main.html

3 Computers

The supported statistical software for the course is SAS statistical software, running on the Unix system at WPI. In order to use SAS, you must have a CCC Unix computer account and, if accessing Unix from a PC, a CCC PC Network computer account, both of which you will have been given when you registered. In the unlikely event that you do not have a computer account, or if you have difficulty with your account, inquire at the I/O desk at CCC in Fuller Labs.

A document found on the WPI web pages at URL

http://www.math.wpi.edu/Course_Materials/SAS/sas03_intro.html

contains a brief introduction to the WPI computing environment. This document also contains a tutorial for SAS statistical software. I am assuming that the great majority of you have taken MA 2611 and therefore have familiarity with SAS. If you did not, or do not, please see me.
While you will need to use SAS to do some of the course labs, you are not required to use SAS for other statistical computing in the course (such as for homeworks). However, if you use other software, you are on your own as far as technical support goes.

4 Performance Measures

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

4.1 Tests

There will be four open book, open note, fifty-minute, in-class tests, one for each of chapters 6-9. These are individual (not group) exams and involve problem solving, statistical reasoning and the analysis of data.

4.2 Supplemental Activities

You will be assigned a supplemental activity for each of chapters 6-8.

The Supplemental Activity for Chapter 6.

For the Chapter 6 supplemental activity, you are to find a published paper in your major field of study which conducts and reports the results of at least one hypothesis test covered in Chapter 6. This is an individual assignment and may not be done in groups. You are to submit a 1-2 page report giving:

1. The source.
2. A brief statement of the problem the hypothesis test addresses and how it relates to your major.
3. The components of the hypothesis testing problem (scientific hypothesis, statistical model, statistical hypothesis, test statistic, p-value). **Note:** You may not be able to obtain one or more of these components from the paper. If so, explain this in your report.
4. The author’s conclusion.
5. Your assessment of the quality and validity of the reported test.

Supplemental Activities for Chapters 7 and 8.

The supplemental activities for chapters 7, 8, and 9 will be labs conducted in SH 306 during your assigned lab period. Lab periods are scheduled for you to do the labs, but the labs may have to be finished outside of these periods. 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 group, 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. I will leave the decision up to you. Each lab report 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. To give you an idea of what is expected in a lab report, a sample lab report is available at

http://www.math.wpi.edu/Course_Materials/SAS/labrep01.pdf

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.
The lab report must be completed in the format used in the sample lab report. 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).

4.3 Homework

Homework is assigned for your benefit and practice. You are to use it as a yardstick against which to measure your understanding. You may discuss it with other class members as a check on your understanding. Note that this does not mean copying it from another class member. 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.

About half the problems will be graded from each homework assignment. Your homework grade will be based only on the graded problems.

5 Grading

Grades will be assigned as follows (note that the total points for individual homework assignments may not equal 25 points, but each score will be normalized to an equivalent score out of 25 for determination of the final grade):

<table>
<thead>
<tr>
<th>Activity</th>
<th>Maximum Possible Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplemental Activities (3 @ 50 points each)</td>
<td>150</td>
</tr>
<tr>
<td>Homework Sets (4)</td>
<td>100</td>
</tr>
<tr>
<td>Tests (4 @ 100 points each)</td>
<td>400</td>
</tr>
</tbody>
</table>

Maximum Possible Total Points 650

6 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 per course is a fair figure for students taking only three courses, and I expect you to put in that amount in MA 2612, on average. (By “on average” I mean a class-wide average. Some of you are faster learners and will average less than seventeen hours per week; some of you are slower learners and will average more.)

7 Late Assignments

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

8 Makeups

Makeup exams will be given only in the event of serious illness or other extraordinary circumstances.
9 Special Needs Students

If you need course adaptations or accommodations because of a disability, or if you have medical information to share with me, please make an appointment with me as soon as possible. Students with disabilities, who believe that they may need accommodations in this class, are encouraged to contact the Disability Services Office (DSO), as soon as possible to ensure that such accommodations are implemented in a timely fashion. The DSO is located in Daniels Hall, (508) 831-5235.