Syllabus for: Stat 427/527 Advanced Data Analysis I - Fall 2005

Section 001: Tu Th 12:30-13:45 MH 101

INSTRUCTOR: Ronald M. Schrader, 435 Humanities 277 - 7423 (schrader@stat.unm.edu)

OFFICE HOURS: Tuesday 2-4 PM and Thursday 2-3 PM

PREREQUISITE: An introductory statistics class or permission of instructor

COURSE MATERIALS

1. (optional) Statistics for the Life Sciences by Samuels and Witmer.
2. (required) Instructor's notes. In previous semesters these notes were made available at Kinko's at the beginning of the semester. I decided the notes were getting pretty dated and need work, which is in progress. A PDF version of the notes (readable by Adobe Acrobat) will be available on my www page (see below) as I get them ready. I will try to have them ready normally a week ahead of time. The notes I am rewriting are those originally written by Professor Bedrick. If you want to see the old notes they are available on his web site at http://math.unm.edu/∼bedrick/ma347/folder.f04.html

I will be posting course materials on the course web page,

http://math.unm.edu/∼schrader/Data_Analysis_I.html

Information on the software, course notes, homework, and other material will be there.

SYLLABUS:

The purpose of this course is to familiarize you with commonly used elementary data analytic techniques. The statistical package Minitab will be used for calculations. Next semester we will use SAS. Computing facilities provided by UNM (although you can get a copy of the software for your own PC very cheaply and that will be a lot better place to work, if you have a machine). No previous computing experience required.

GRADING

1. Regular HW (50%) No late homework, please
2. Midterm (25%)
3. Final/Project (25%)

A BRIEF OVERVIEW OF TOPICS

1. Introduction to Minitab
2. Summarizing Data
3. One-Sample Confidence Intervals and Hypothesis Tests
4. Two-Sample Inferences
5. Checking Assumptions
6. One-Way Analysis of Variance with Multiple Comparisons
7. Nonparametric Methods
8. Analyzing Categorical Data
9. Two-Way Contingency Tables
10. Simple Linear Regression - Transformations, Diagnostics, Influence
11. Introduction to Multiple Regression

Note: The follow-up course Stat 428/528 considers more sophisticated techniques