Principles of Statistical Inference

Math 756/856, Section 01; Spring 2006

Times: Monday and Wednesday, 11:10-12:00pm; Friday, 11:10-1:00pm.

Location: MUB ITV Room or through internet via Far View.

Instructor: Linyuan Li, Mill Road 4, Trailer in parking lot C, room 2, 862-4592, linyuan@math.unh.edu

Office hours: Monday: 3:30-5:00pm; Wednesday: 10:00-11:00am; Thursday: 3:30-5:00pm and by appointment.

Text book: "Mathematical Statistics and Data Analysis" Second Edition. by John A. Rice. 1995 Duxbury Press.

Prerequisites: Math755/855; or intermediate probability, plus some of linear algebra and permission by the instructor.

Course Outline: This course provides an introduction to the basic principles and methods of statistical estimation, model fitting and hypothesis testing.

Topics are: Sampling distributions, estimation of parameters and fitting of probability distributions, likelihood methods, consistency, efficiency and sufficiency, confidence regions, Neyman-Person lemma, testing hypotheses and assessing goodness of fit, empirical cumulative distribution function, measures of location and dispersion, one- and two-sample procedures, multiple comparisons, decision theory and Bayesian inference. We will cover chapters 6, 8, 9, 10 and selected parts of chapters 11, 12, 13, 14 and 15.

Computer usage: We will use statistical software S-Plus through the course to illustrate the concepts and theories. The software is available to you for installation on your own PC's via the UNH site license.

Homework: You are expected to attend every class session and the weekly assignments will be given in the lectures, which are related to that week's material. It is very important that exercises be completed in a timely manner. Doing your homework and finding your own mistakes is an important activity for understanding the course material. Late homework is not accepted, however the lowest one homework scores can be dropped (we expect about ten (10) homework assignments). It is essential that you start working from the very beginning. We will keep using the material covered in earlier parts of the term later and therefore you need to understand it.

Exams: There will be one midterm exam and one final exam in this course. The tentative midterm exam is on Friday, 11:10-1:00am, March 24, and final exam takes place on Thursday, 8:00-10:00am, May 11. All exams are closed book and closed notes. One sheet of notes will be allowed. If you are unable to take a exam, contact the instructor *before* the exam time. Medical excuses must be verifiable. Make-up exam will be administered only under exceptional circumstance.

Assessment: The student's grade will be determined on the basis of about ten (10) homework assignments (40% of the grade), One (1) mid-term exam (30% of the grade) and one final exam (30% of the grade). In-class participation will be considered for final grade determination.

Tentative grading scale:

A.	92% - 100%;	**A-.**	90% - 91.9%;		
B+.	88%-89.9%;	**B.**	82% - 87.9%;	**B-.**	80% - 81.9%;
C+.	78%-79.9%;	**C.**	72% - 77.9%;	**C-.**	70% - 71.9%;
D+.	68%-69.9%;	**D.**	62% - 67.9%;	**D-.**	60% - 61.9%;
F.	0%- 59.9%.				

Web Page: All the additional course material will be put at blackboard web-site http://blackboard.unh.edu/, where you can download the lecture notes, handouts, solutions of homework assignments and other information.

Note: The instructor reserves the right to make any changes he considers academically advisable. It is your responsibility to attend classes and keep track of the proceedings.