MATH 207, Probability and Statistics
Spring, 1993
Dr. Evelyn C. Bailey

TEXT: Introduction to Statistics, Howard B. Christensen

CONTENT: Visual displays of Data, measures of central tendency and of variability, counting, probability, Bayes Theorem, probability functions, Chebyshev's Theorem, discrete distributions (binomial, hypergeometric, Poisson, uniform), continuous distributions (Gamma, exponential, normal, uniform), Central Limit Theorem, Confidence Invervals, Hypothesis Testing (for means and for proportions), ANOVA, Linear Regression (simple and multiple).

GOALS: At the end of this course, students should be able to categorize data, to work various probability problems, to understand the role of functions in statistics, to describe major misuses of statistics, to recognize several standard distributions, to analyze interval data for which statistical tests involving difference of means and difference of proportions is needed, to check for inherent assumptions of statistical models that are included in this course, to interpret relationships in bivariate data, to understand the role of statistics in analyzing data and in inference.

GRADING: Grades will be determined by student performance on "take home" problem sets worth 250 points each:

PS 1 Data, Probability, Functions
(Chapters 1, 2, 3) due on Tuesday, February 23

PS 2 Discrete and Continuous Distributions
(Chapters 4, 6) due on Tuesday, March 23

PS 3 Confidence Intervals, Hypothesis Testing
(Chapters 7, 8, 9) due on Tuesday, April 13

PS 4 ANOVA, Linear Regression, Previous topics
(Chapter 10, plus above) due at the time of your final exam

There will be opportunities for extra credit work, announced in class. Points earned on extra credit will be added to your total points that will determine your grade. In general,

900 and up	A
750 to 899 points	B+, B, B-
600 to 749 points	C+, C, C-
550 to 599 points	D
below 550 points	F

Tues. 2/16	bivariate distributions, independence (sections 3.8, 3.9)
Thurs. 2/18	binomial distribution (sections 4.1, 4.2)
Tues. 2/23	PROBLEM SET 1 DUE Hypergeometric, Poisson, and uniform distributions (sections 4.3, 4.4, 4.5)
Thurs. 2/25	Gamma and Exponential distributions (sections 4.6, 4.7, 4.8)
Tues. 3/2	Normal distribution (section 4.9)
Thurs. 3/4	Central Limit Theorem, normal approximation to the binomial (sections 6.2, 6.6) RECEIVE PROBLEM SET 2 [Spring break from March 8 through March 12]
Tues. 3/16	Review probability distributions
Thurs. 3/18	method of moments, maximum likelihood, "good" estimators (sections 7.1, 7.2, 7.3, 7.4)
Tues. 3/23	PROBLEM SET 2 DUE confidence intervals (sections 7.5, 7.8)
Thurs. 3/25	Hypothesis testing (sections 8.1, 8.2)
Tues. 3/30	Hypothesis testing related to means (sections 8.3, 8.4)
Thurs. 4/1	Hypothesis testing related to means continued (sections 8.5, 8.6) RECEIVE PROBLEM SET 3
Tues. 4/6	Hypothesis testing related to proportions (section 9.2)
Thurs. 4/8	ANOVA (section 10.1)
Tues. 4/13	Simple Linear Regression (section 10.4) PROBLEM SET 3 DUE
Thurs. 4/15	Multiple Linear Regression (Section 10.4)
Tues. 4/20	Multiple Linear Regression continued (section 10.4) RECEIVE PROBLEM SET 4
Thurs. 4/22	Nonparametric statistical tests [if time]
Tues. 4/27	(sections 10.2, 10.3)

PROBLEM SET 4 IS DUE AS YOUR FINAL EXAM, THIS PROBLEM SET CANNOT BE LATE.