STATISTICS 270-3
INTRODUCTION TO PROBABILITY AND STATISTICS

Summer 2004
DAY COURSE

Instructor: Scott Pai

Prerequisite:

MATH 152
_____ may not take STAT 270 for further credit.

Textbook:

Probability and Statistics for Engineering and the Sciences (6thed.) by J. Devore, Duxbury publishers.

Calendar Description:

Basic laws of probability, sample distributions. Introduction to statistical applications.

Outline:

1. Introduction to descriptive statistics and chance phenomena.
2. Elementary probability rules, basic combinatorial formulae, conditional probability, independence, and Bayes' theorem.
3. Binomial, hypergeometric, and Poisson distributions.
4. Expectation and variance.
5. Continuous distributions, uniform, exponential, gamma, and normal distributions, normal approximation to the binomial distribution.
6. Discrete, bivariate distributions, joint, marginal, and conditional distributions, covariance and independence.
7. Sums of random variables, law of large numbers, the central limit theorem.
8. Introduction to sampling distributions with application to basic hypothesis testing, control charting, and confidence interval problems for a proportion and a mean.
9.