

 **STATISTICS 270-3**
INTRODUCTION TO PROBABILITY AND STATISTICS

Summer 2005
DAY COURSE

Instructor: R. Insley
Lab Instructor: R. Insley

Prerequisites:

MATH 152 or MATH 155 or MATH 158 must precede or be taken concurrently. Students with credit for MATH 371 or MATH 272 may not take STAT 270 for further credit.

Textbook:

Probability and Statistics for Engineering and the Sciences (6th ed) 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, and confidence interval problems for a proportion and a mean.
 9. Scatterplots, simple linear regression, and the correlation coefficient (subject to time availability).
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Grading:

Homework	15%
Midterms	40% (2 x 20%)
Final	45%.

Students should be aware that they have certain rights to confidentiality concerning the return of course papers and the posting of marks. Please pay careful attention to the options discussed in class at the beginning of the semester. Students are reminded that Academic Honesty is a cornerstone of the acquisition of knowledge. Scholarly integrity is required by all members of the University. Please consult the General Guidelines for details.

Revised March 2005