

STATISTICS 270-3

INTRODUCTION TO PROBABILITY AND STATISTICS

Fall 2003
DAY COURSE

Instructor: DR. T. SWARTZ (SSC K 10539)
Lab Instructor: R. INSLEY (SSC K 10552)

Prerequisites:

MATH 152 or MATH 155 or MATH 158 must precede or be taken concurrently. Students with credit for MATH 371 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, hyper geometric, 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. Scatterplots, simple linear regression, and the correlation coefficient (subject to time availability).
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Grading:

A grading scheme will be announced by the instructor at the beginning of the semester.

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