APPLIED ENGINEERING PROBAILITY AND STATISTICS

STAT 3800/8805

Course Description:

An introduction to the application of probability and statistics to engineering problems. Topics include: probability and probability distributions, mathematical expectation, distribution of random variables, binomial, Poisson, hypergeometric, gamma, normal, and t-distributions, Central Limit Theorem, confidence intervals, hypothesis testing, linear regression, contingency tables. Credit for both MATH 4740 and STAT 3800 will not be given. **3 credits**

Prerequisites:

MATH 1970

Overview of content and purpose of the course:

To introduce the engineering student to the applications of probability and statistics in engineering. To accomplish this objective, the textbook chosen will be one written primarily for the engineering discipline.

Anticipated audience/demand:

Required for engineering students.

Major topics:

1) Data Collection and Exploration

2) Probability

3) Some Probability Distributions

4) Sampling Distributions and Estimation

5) Hypothesis Testing

6) Inference for Regression

Methods:

The class will be presented primarily in lecture form.

Textbook:

Scheaffer, Richard L., Madhuri Mulekar, and James T. McClave. *Probability and Statistics for Engineers, 5th ed*. Boston: Brooks/ Cole Cengage Learning, 2010.

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