

MATHEMATICS 5710 - INTRODUCTION TO PROBABILITY

<http://www.math.usu.edu/rheal/math5710/>

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Course Objectives: This course is an introduction to probability designed for students with a calculus experience. The course focuses on developing the student's intuitive grasp of probabilistic methods. True understanding of the basic ideas is stressed over formal manipulation. Important connections of probability to statistics, science, and engineering are discussed. A wide range of examples and exercises makes this course a valuable experience for good students from any discipline.

Catalog Description: Discrete and continuous probability, random variables, distribution and density functions, joint distributions, Bayes' theorem, moments, moment generating functions, inequalities, convergence in probability and distribution, and central limit theorem. Prerequisites: Math 2210, and Math 2250 or 2270. (3-credits)

Textbook: *Mathematical Statistics and Data Analysis (Third Edition)*, John A. Rice, Duxbury Press, 2007. (Note: Any edition will work but with some inconvenience.)

Exams:

Test 1	100 pts	September 20
Test 2	100 pts	October 17
Test 3	100 pts	November 15
Final Exam	200 pts	December 9, 9:30-11:20

Assignments: Written assignments will be collected and a portion of each will be graded. The total of all homework will be worth 100 points. Late assignments will not be accepted.

Office Hours: Tuesday, Thursday: 2:30 – 3:30 PM; AnSci 306

Grades: Semester grades will be based on the 600 points indicated above. Here is an approximate grade distribution:

A : 25 % B: 35 % C: 35 % D, F: 5 %

A basic tenet of Western science is that the behavior of systems in nature can be accurately described with mathematics. In 1623 Galileo wrote:

Philosophy is written in this grand book - I mean universe - which stands continuously open to our gaze, but it cannot be understood unless one first learns to comprehend the language in which it is written. It is written in the language of mathematics, and its characters are triangles, circles, and other geometrical figures, without which it is humanly impossible to understand a single word of it; without these, one is wondering in a dark labyrinth without which it is humanly impossible to understand a single word of it; without these, one is wondering in a dark labyrinth.