Statistics 6301
Probability for Statistical Inference
3 semester hour course

Prerequisite: Math 547x or Math 548 or permission of the instructor.
Exclusions: Not open to students with credit for Math 530x or Math 530 or Stat 6801 or Stat 620 or Stat 610.

Location: - - -
Conversion note: Converted from a 5 credit hour quarter course (Topics are unchanged)

TENTATIVE COURSE DESCRIPTION
Introduction to probability, random variables, and distribution theory; intended primarily for students in the MAS degree program.

TOPIC LIST
1 Sample spaces; probability measures; combinatorial methods
2 Conditional probability; Bayes’ Theorem; independence
3 Theory of discrete random variables
4 Theory of continuous random variables
5 Commonly used discrete and continuous probability distributions
6 Transformations of a random variable
7 Joint probability distributions; marginal and conditional distributions
8 Transformations of jointly distributed random variables
9 Extrema and order statistics
10 Expected value and properties; higher moments
11 Covariance and correlation; conditional expectation
12 Moment generating functions
13 Convergence in probability; Law of Large Numbers
14 Convergence in distribution; Central Limit Theorem; examples
15 Chi-square, t, and F distributions; connection with normal samples