3 Introduction to Probability   Spring 1997

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scription:
introductory course in probability, with applications to the
ysical sciences and engineering. Topics will include: Discrete and
ntinuous random variables, conditional probability and independent
ents, generating functions, special discrete and continuous random
riables, laws of large numbers and the central limit theorem.
phasis will be placed on computations with the standard distributions
 probability theory and classical applications of them.

xtbook:
troduction to Probability, 2nd Edition, by Richard L. Scheaffer, PWS-Kent

pics:

  Probability: formal definition, counting rules,   conditional
obability and independence

   Discrete Probability Distributions: random variables, expected
lues, the Bernoulli, binomial, geometric, negative binomial, Poisson
d hypergeometric distributions, moment-generating and
obability-generating functions

   Continuous Probability Distributions: continuous random variables,
e uniform, exponential, gamma, normal, beta and Weibull distributions

  Multivariate Probability Distributions: bivariate and marginal
stributions, independent random variables, multinomial distribution,
nditional expectations, queues

   Functions of Random Variables: methods of distribution functions,
ansformations and conditioning, order statistics,
obabioity-generating functions, arrival times for the Poisson
ocess, infinite-server queue

   Approximations to Probability Distributions – Limit Theorems:
nvergence in probability and distribution, central limit theorem,
newal theory (reliability)