

**Tennessee Technological University
Mathematics Department**

MATH 6370-6380: Probability Theory and Stochastic Processes I-II

I. COURSE DESCRIPTION FROM CATALOG:

Probability theory of sets, random variable distribution and characteristic functions, convergence, limits and law of large numbers, convolutions, compound distribution, recurrent events, random walk models, Markov chains, homogeneous, and queuing processes. Lec. 3. Cr. 3.

II. PREREQUISITE(S):

MATH 6370: C or better in MATH 4480 or MATH 5480.
MATH 6380: C or better in MATH 6370.

III. COURSE OBJECTIVE(S):

To study the Combinatorics, Theoretical Probability, Conditional Probability, Bayes Rule, Expectations Covariances, Generating Functions, Conditional Expectations, Chebysheves and other Inequalities, Limit Theorems, Stationary Stochastic Processes, Markov Chain, Random Walk, Markov Processes and Queuing Process.

IV. STUDENT LEARNING OUTCOMES:

MATH 6370

Upon successful completion of the course the student will be able to understand fundamental ideas of probability theory and stochastic processes involving Brownian motions; develop basic skills to apply stochastic calculus and solve stochastic differential equations in problems and applic

VIII. ANY TECHNOLOGY THAT MAY BE USED:

IX. STUDENT ACADEMIC MISCONDUCT POLICY

Maintaining high standards of academic integrity in every class at Tennessee Tech is critical to the reputation of Tennessee Tech, its students, alumni, and the employers of Tennessee Tech graduates. The Student Academic Misconduct Policy describes the definitions of academic misconduct and policies and procedures for addressing Academic Misconduct at Tennessee Tech. For details, view the Tennessee Tech's Policy 217 – Student Academic Misconduct at [Policy Central](#).

X. DISABILITY ACCOMMODATION

Students with a disability requiring accommodations should contact the Accessible Education Center (AEC). An Accommodation Request (AR) should be completed as soon as possible, preferably by the end of the first week of the course. The AEC is located in the Roaden University Center, Room 112; phone 931-372-6119. For details, view the Tennessee Tech's Policy 340 – [Services for Students with Disabilities at Policy Central](#).