INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI

भारतीय प्रौद्योगिकी संस्थान तिरुपति

Yerpedu-Venkatagiri Road, Yerpedu Post, Tirupati District, Andhra Pradesh - 517 619

1.	Title of the course	Stochastic Processes
2.	Course number	MA523L
3.	Structure of credits (L-T-P-C)	2-0-0-2
4.	New course/modification to	Modified with MA509L/STOCHASTIC PROCESSES AND TIME SERIES ANALYSIS
5.	To be offered by	Mathematics and Statistics
6.	Prerequisite	None
7.	**Course Objective(s):** To develop theoretical concepts of stochastic processes. To describe discrete and continuous-time stochastic processes.	
8.	**Course Content:** Stochastic process definitions; Discrete-time Markov models: discrete-time Markov chains, examples of Markov models, transient distributions, occupancy times, limiting behavior, first-passage times; Continuous-time Markov models: continuous-time Markov chains, examples; Poisson processes.	
9.	**Textbook(s):** 1. Kulkarni V G, Introduction to Modeling and Analysis of Stochastic Systems, 2nd Edition, Springer (2013). 2. Medhi, J, Stochastic Processes, 3rd Edition, New Age Science (2009).	
10.	**Reference(s):** 1. Ross S M, Stochastic Processes, John Wiley (1983). 2. Karlin S and Taylor H M, First Course in Stochastic Processes, Academic Press (1975).	