MA361 Aug 3:0

Probability Theory

Instructor

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Department: Mathematics

Course Time: Tue., Thu., 11:00 - 12:30 PM

Lecture venue: LH - III

Detailed Course Page:

Announcements

Brief description of the course

The course is a rigorous measure-theoretic introduction to the theory of probability focusing on limit theorems for independent random variables culminating with the thery of discrete parameter martingales. Graduate and fourth year undergraduate students interested in obtaining a sound foundation in probability aimed at research and applications are the primary audience.

Prerequisites

Real analysis and measure theory background and a course in basic probability is required.

Syllabus

Measure theory review, various types of convergence of random variables, weak and strong laws of large numbers, convergence of series, central limit theorem for independent random variables, discrete parameter martingales.

Course outcomes

Students will be able to understand advanced probability models and be able to analyse and develop such models.

Grading policy

30% for mid-term exams, 20% for quizzes, 50% for final exam. In addition, one challenging problem is assigned each week. Marks obtained in these assignments can be used to enhance the grades obtained.

Assignments

Resources

Probability Theory by A. N. Shiuryayev, Probability - Theory and Examples by R. Durrett.