

MATH 419/545: Stochastic Processes/Probability II
(3 credits)

Instructor: Mathav Murugan

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Lectures: MWF 10-11 at MATH 204

Office hours: Mon 1-3, Wed 11-12 at MATX 1102

Course webpage: <http://www.math.ubc.ca/~mathav/teaching/419s20.html>

Text: *Probability: Theory and Examples* by R. Durrett. Version 5 available for free download at the authors webpage at https://services.math.duke.edu/~rtd/PTE/PTE5_011119.pdf.

Prerequisites: Math 418/544

Outline. This course is a continuation of Math 418/544. Together they give a comprehensive introduction to measure theoretic probability which should be ideal for those wishing to study probability, or use it as a tool in analysis, statistics, mathematical biology, economics, finance or applied mathematics.

The course will be based on Chapters 4–8 of Durrett, with additional topics as time permits. The main topics are:

1. Martingales
2. Markov chains
3. Brownian motion
4. Ergodic theory

Evaluation: Homework will be assigned regularly (5 to 7 in total) for 60% of the grade.

There will be a final exam for 40% of the grade.

Instructions on submitting Homework:

1. Solutions will be graded both on accuracy and quality of exposition. Solutions should be mathematically rigorous, well-crafted, and written in complete English sentences. Solutions must always be legible; use of LaTeX is encouraged and appreciated.
2. Please staple your pages together when you submit your assignment.

Updated on January 5, 2020.