Syllabus

Math 571 Advanced Probability. Spring 2026.

Binghamton University

Instructor: Vladislav Kargin

■ Office: WH-136

■ Meeting time and location: TR - 8:00-9:30AM - WH 329

• Office hours: Wednesday - 12-1:30pm

This course is a 4-credit course, which means that in addition to the scheduled lectures/discussions, students are expected to do at least 9.5 hours of course-related work each week during the semester. This includes things like: completing assigned readings, participating in lab sessions, studying for tests and examinations, preparing written assignments, completing internship or clinical placement requirements, and other tasks that must be completed to earn credit in the course.

Prerequisite

Probability Theory (MATH 501)

Description

This course is an introduction to the advanced concepts of probability theory. It covers topics such as: Measure theory, Probability spaces, Random variables, Conditional Expectations, Stochastic processes, Martingales, Limit Theorems, Large deviations

The course is intended for students who have a strong foundation in probability theory.

Recommended Texts

Durrett "Probability: Theory and Examples" 5th edition, pdf available at PTE.

Piazza

We will use Piazza ("http://piazza.com/") for communication. All announcements will be sent to the class using Piazza.

Homework Policies

Weekly sets. I fully grade two or three problems (announced after submission); the other count for completion. Solutions must be concise (≤ 1 page/problem) and list the named results used (e.g., "DCT + UI"). Starting HW2, the solution for these problems must be typed in LaTeX, typeset to pdf and submitted by the due date. 3 late-day tokens total for the term; beyond that late work is not accepted.

Rubric for a HW problem: 4 = correct & clear; 3 = essentially correct (minor gap); 2 = right idea with major gap; 1 = meaningful progress; 0 = off-track. +0.5 exposition bonus possible (capped at 4).

I may invite you to brief board checks on your own solutions; these verify understanding and may adjust the HW score slightly.

You may discuss ideas, but write your own solutions.

Exam

There will be one in-class midterm (open-book/no-web) and a final take-home exam with a brief (\sim 10-12 minutes) oral follow-up. I will choose one of your solutions and ask a few "why does this step hold? / where does the hypothesis bite?" questions. Final is cumulative.

Grading

- Homework (45%)
- Midterm exam (15%)
- Final write-up (30%)
- Final follow-up (10%)

Tentative schedule

Midterm	ТВА
Final Exam	TBA, as scheduled by the University

From:

https://www2.math.binghamton.edu/ - **Department of Mathematics and Statistics, Binghamton University**

Permanent link:

https://www2.math.binghamton.edu/p/people/kargin/math471_spring2025

Last update: 2025/10/19 01:41

