



Full Syllabus



Course Title

An introduction to stochastic phenomena

Lecturer

Shlomi Reuveni

Semester

A

Course requirements

Home assignments will be given every week. Solving at least 70% of the assignments is a pass/fail requirement. An exam will be held at the end of the course.

Final grade components

The grade in the course will be determined based on the home assignments and the exam.

Course schedule

Class no. / Date	Subject and Requirements (assignments, reading materials, tasks, etc.)
0	Prerequisite: Introduction to discrete & continuous probability
1-2	Random walk on the 1d lattice
3	General random walk in 1d and the central limit theorem
4	Central limit theorem and diffusion
5	Diffusion and generalized central limit theorem
6	Generalized central limit theorem and the Montroll-Weiss continuous time random walk
7	Continuous time random walk
8	Anomalous diffusion, generating functions, first-passage and first-return
9	Pólya's theorem, mean number of distinct sites visited, compactness
10	The target and trapping problems
11	Markov chains and applications
12	Enzymatic catalysis at the single-molecule level



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Required course reading

Optional course reading

Comments