



Syllabus

TOPICS IN PROBABILITY THEORY - 80588

Last update 07-03-2016

HU Credits: 2

Degree/Cycle: 2nd degree (Master)

Responsible Department: Mathematics

Academic year: 0

Semester: 1st Semester

Teaching Languages: Hebrew

Campus: E. Safra

Course/Module Coordinator: Dr. Ori Gurel-Gurevich

Coordinator Email: Ori.Gurel-Gurevich@mail.huji.ac.il

Coordinator Office Hours: by appointment

Teaching Staff:

Prof Ori Gurel-Gurevich

Course/Module description:

A uniform spanning tree (UST) is a random spanning tree, chosen uniformly at random from all spanning trees of a given finite graph. We will see how to simulate such a tree, what are its properties and how to generalize this notion to infinite graphs.

Course/Module aims:

Learning outcomes - On successful completion of this module, students should be able to:

understand what are uniform spanning trees and forests.
know when a simple random walk on a graph is recurrent or transient.
understand open problems in this topic.

Attendance requirements(%):

0

Teaching arrangement and method of instruction: lecture

Course/Module Content:

Random walks and electric networks.
Uniform spanning tree of a finite graph.
Wilson's algorithm.
Infinite electrical networks.
Uniform spanning forests of an infinite graph.

Required Reading:

Probability on Trees and Networks by Lyons and Peres, chapters 2,3,4,9,10

Additional Reading Material:

Course/Module evaluation:

End of year written/oral examination 0 %
Presentation 0 %

Participation in Tutorials 0 %
Project work 100 %
Assignments 0 %
Reports 0 %
Research project 0 %
Quizzes 0 %
Other 0 %

Additional information: