

## The Department of Mathematics

2015–16–B term

**Course Name** Random walks

**Course Number** 201.2.0391

**Course web page**

<https://www.math.bgu.ac.il/en/teaching/spring2016/courses/random-walks>

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**Office Hours** <https://www.math.bgu.ac.il/en/teaching/hours>

### Abstract

### Requirements and grading<sup>1</sup>

### Course topics

In a random process, by definition, it is not possible to deterministically predict the next step. However, we will see in this course how to predict rigorously the long term behavior of processes. We will study in this course processes, known as *Markov processes*, in which the next step depends only on the current position. We will see that these processes are deeply related to electrical networks, and to notions from information theory such as entropy. We will develop techniques of discrete analysis, which are counterparts of classical analysis in the discrete setting. These notions are at the cutting edge of current research methods in these fields

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<sup>1</sup>Information may change during the first two weeks of the term. Please consult the webpage for updates