

## CHAPTER OVERVIEW

### 11: Markov Chains

Modern probability theory studies chance processes for which the knowledge of previous outcomes influences predictions for future experiments. In principle, when we observe a sequence of chance experiments, all of the past outcomes could influence our predictions for the next experiment. For example, this should be the case in predicting a student's grades on a sequence of exams in a course. But to allow this much generality would make it very difficult to prove general results. In 1907, A. A. Markov began the study of an important new type of chance process. In this process, the outcome of a given experiment can affect the outcome of the next experiment. This type of process is called a Markov chain.

[11.1: Introduction](#)

[11.2: Absorbing Markov Chains\\*\\*](#)

[11.3: Ergodic Markov Chains\\*\\*](#)

[11.4: Fundamental Limit Theorem for Regular Chains\\*\\*](#)

[11.5: Mean First Passage Time for Ergodic Chains](#)

[11.R: Footnotes and References](#)

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