

**Probability Theory, Part 1, 8.0 credits**

Sannolikhets teori, del 1, 8.0 hp

Third-cycle education course

MAI0074

Dept of Mathematics

Valid from: First half-year 2023

**Approved by**  
Head of Department

**Approved**

**Registration number**

## Entry requirements

Advanced undergraduate courses in probability theory and analysis. Measure and integration theory helpful, but not necessary.

## Contents

Measure-theoretic foundations of probability theory; probability distributions; random variables; expectation; convergence concepts; laws of large numbers; characteristic functions; central limit theorems; conditional expectation and regular conditional distributions.

## Educational methods

Lectures.

## Examination

Home assignments.

## Grading

One-grade scale

## Course literature

Durrett, R. (2019). *Probability: theory and examples*, 5th ed. Cambridge University Press.