

**Topics for Exam 1****1. Sample Spaces and  $\sigma$ -Fields**

- 1.1 Random experiments
- 1.2 Sample spaces
- 1.3  $\sigma$ -Fields

**2. Probability Spaces**

- 2.1 Definition of probability
- 2.2 Properties of probability
- 2.3 Independent events
- 2.4 Conditional Probability

**Relevant sections in the online class notes:** 3.1, 3.2, 3.3 , 3.4 , 3.5 and 3.6.

**Relevant sections in the text:** 1.4, 1.5, 1.6, 2.1, 2.2 2.3, 3.1 and 3.2.

**Relevant assignments:** 1, 2, 3, 4, 5 and 6.

**Important concepts:** Sample space,  $\sigma$ -Field, probability space, conditional probability, independent events.

**Important skills:**

- Know how to compute probabilities of events.
- Know how to compute conditional probabilities.
- Know how to determine whether events are independent