

# THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

## ISOM 3540 Introduction to Probability

### Course Outline

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### Course description

This course presents basic probability concepts and techniques. Topics like conditional probability, expectation, random variables, discrete and continuous distributions, joint distribution, dependence measures and limit theorems, etc, will be discussed. Modern applications in business, economic, finance and marketing are also presented.

### Tentative schedule

1. Combinatorial analysis
2. Axioms of probability and conditional probability
3. Discrete random variables
4. Continuous random variables
5. Joint distributions
6. Properties of expectation
7. Dependence measures
8. Ideas of Bayesian decision

### Grading

Assignments	25%	
Midterm exam	25%	[TBA, in the lecture]
Final exam	50%	

### Reference

1. Sheldon Ross (2019). *A First Course in Probability*, 10<sup>th</sup> edition.

**Chapters of the reference book for the syllabus**

<b>Topics</b>	<b>Reference book</b>
Combinatorial analysis	Chapter 1
Axioms of Probability and conditional probability	Chapter 2 and 3
Discrete random variables	Chapter 4
Continuous random variables	Chapter 5
Joint distribution	Chapter 6
Properties of expectation	Chapter 7
Dependence measures	Chapter 7
Ideas of Bayesian decision	Chapter 7