

THE CHINESE UNIVERSITY OF HONG KONG
Department of Mathematics
MATH4240 Stochastic Processes, 2023/24 Term 2

Textbook: Introduction to Stochastic Processes by Hoel, Port and Stone.
(Chapter 1, Chapter 2, and Chapter 3 ONLY)

Schedule for Lecture:

	Monday (10:30-11:15, Science Centre L5)	Wednesday (10:30-12:15, Hui Yeung Shing Bldg G04)	Tentative contents
W1	Jan 8	Jan 10	Chapter 0 Review on Probability -Probability space -Radom variables and distributions -Expectation and variance -Sequence of rv
W2	Jan 15	Jan 17	
W3	Jan 22	Jan 24	Chapter 1 Markov Chains -Definitions and examples -Computations with transition prob -More examples
W4	Jan 29	Jan 31	
W5	Feb 5	Feb 7	
W6	Feb 12 (no class, holiday)	Feb 14 (no class, holiday)	
W7	Feb 19	Feb 21	
W8	Feb 26	Feb 28	Chapter 2 Stationary Distributions -Definition and examples -Computations of SD -Average number of visits -Waiting time and existence of SD -Periodicity
W9	Mar 4 (no class, reading week)	Mar 6 (no class, reading week)	
W10	Mar 11	Mar 13	
W11	Mar 18	Mar 20	Chapter 3 Markov Jump Processes -Jump process -Poisson process -Basic properties of MJP -Birth and death processes -Limiting properties of MJP
W12	Mar 25	Mar 27	
W13	Apr 1 (no class, holiday)	Apr 3	
W14	Apr 8	Apr 10	
W15	Apr 15	Apr 17	

Note:

- Assessment type: Homework (10%, about 7 times), Two Tests (40%) and Final Exam (50%).
- Test 1 (Time and date: **Feb 21 Wed, from 18:30**; Venue: **LSB LT2**).
- Test 2 (Time and date: **Mar 27 Wed, from 18:30**; Venue: **LSB LT2**).
- Tutorial: Monday 11:30 - 12:15, Science Centre L5.