



Stochastic Processes for Networking (網路之隨機程序)

Instructor: Jung-Chun Kao (高榮駿)

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Course outline

- This is an applied math course for networking
- This course covers
 - Preliminaries (ch 1-3)
 - Random variables and stochastic processes
 - Probability and expectations
 - Probability inequalities
 - Poisson processes (ch 5)
 - Renewal processes (ch 7)
 - Discrete-time Markov chains (ch 4)
 - Continuous-time Markov chains (ch 6)
 - Generating random variables for simulation (ch 11)
 - This is optional if we have enough time

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Prerequisite

- Required
 - Engineering mathematics
 - Calculus, probability, linear algebra, differential equations, ...
- Recommended but not required
 - Queueing theory

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Logistics

- Instructor: Jung-Chun Kao (高榮駿)
 - Email: jungchuk@cs.nthu.edu.tw
 - Office hour: Tuesdays 5:30 – 6:30pm (台達館 609)
- TAs: See the class webpage for
 - TAs' names, office hours, and contact information
- Meeting times
 - Mondays 3:30 – 5:20pm (台達館 102)
 - Thursdays 2:20 – 3:10pm (台達館 102)
- Class webpage
 - eeclass (<https://eeclass.nthu.edu.tw>)
 - My personal homepage (<http://www.cs.nthu.edu.tw/~jungchuk>)

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Textbook and references

- Textbook
 - Sheldon M. Ross, "Introduction to Probability Models", Academic Press
 - 10th or 13th Edition
- References
 - S. M. Ross, "Stochastic Processes", John Wiley & Sons, Inc., 1996
 - Robert G. Gallager, "Discrete Stochastic Processes", Kluwer



Tentative grading policy

- Homework: 10%
 - No late homework is accepted!
- Exams: 75%
 - 1 midterm exam in the 8th week (10/21)
 - 1 final exam in the 16th week (12/16)
 - No make-up!
- Participation: 15%