

Course Content

Course Title (English)	Stochastic Processes and Applications
Course Title (Chinese)	隨機程序及應用
Credit	3
Instructor	Prof. Char-Dir Chung 鐘嘉德 教授
Outline	<ol style="list-style-type: none">1. Review of Random Variables (Papoulis, Chaps. 1-7, and class note)2. Introduction to Random Processes: General Concepts and Spectral Analysis (Papoulis, Chap. 9, and class note)3. Gaussian Random Vectors and Gaussian Random Processes (Larson & Shubert, class note)4. Signal Representation -- Karhunen-Love Expansion (Papoulis, Chap. 11, and class note)5. Narrowband Processes and Bandpass Systems (Davenport and Root, and class note)6. Poisson Processes (Larson & Shubert, Leon-Garcia, and class note)7. Markov Processes and Markov Chains (Larson & Shubert, Leon-Garcia, and class note)8. Queuing Systems (Leon-Garcia)9. Random Walk Processes and Brownian Motion Processes (Leon-Garcia)
Goal	The purpose of this course is to provide students with a solid and pertinent mathematical background for thoroughly understanding digital communications and communication networks. It is a prerequisite for advanced study of numerous communication applications, including wireless communications, mobile communications, communication networks, spread spectrum

	<p>communications, satellite communications, optical communications, radar and sonar signal processing, signal synchronization, etc. The students majoring in communications and networks are strongly recommended to take this course.</p> <p>The course consists of lectures organized in class notes.</p>
English Teaching	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Teaching Material	<input checked="" type="checkbox"/> English <input type="checkbox"/> Chinese