0981學期 課程基本資料

系所 / 年級	資應系碩士班 1年級	課號 / 班別	79M00044 / A
學分數	3學分	選 / 必修	選修
科目中文名稱	隨機程序	科目英文名稱	Stochastic processes
主要授課老師	謝俊逸	開課期間	一學年之上學期
人數上限	30 人	已選人數	11人

起始週 / 結束週 / 上課地點 / 上課時間

第1週 / 第18週 / I428 / 星期1第02節
第1週 / 第18週 / I428 / 星期1第03節
第1週 / 第18週 / I428 / 星期1第04節

教學綱要

一、教學目標(Objective)	1. To give students probabilistic sense and insight in making decisions under uncertainty. 2. To present some of the theory of stochastic processes and examples to show its extensive range of applications such as in production control, insurance policy design, financial engineering and diverse related fields. Topics covered include Markov chains, renewal processes, random walks, martingales, and Brownian motions.
二、先修科目(Pre Course)	
三、教材內容(Outline)	・Classes of stochastic processes ・Similar to Probability theory, the theory of stochastic process can be developed with non-measure theoretic probability theory or measure theoretic probability theory. ・Limit Theorems ・Laws of large numbers ・Mean Ergodic Theorems ・Central limit theorems (CLT) ・How to characterize the correlation structure of a stochastic process? ・Empirical/sample/time average (mean) ・Borel-Cantelli theorem ・White Gaussian noise: ・Markov property ・Classification of stochastic processes
四、教學方式(Teaching Method)	1. To give students probabilistic sense and insight in making decisions under uncertainty. 2. To present some of the theory of stochastic processes and examples to show its extensive range of applications such as in production control, insurance policy design, financial engineering and diverse related fields. Topics covered include Markov chains, renewal processes, random walks, martingales, and Brownian motions.
五、參考書目(Reference)	

2009/9/21	Introduction
2009/9/28	Classes of stochastic processes
2009/10/5	Similar to Probability theory, the theory of stochastic process can be developed with non-measure theoretic probability theory or measure theoretic probability theory.
2009/10/12	Limit Theorems

六、教學進度**(Syllabi)**	2009/10/19	Laws of large numbers
	2009/10/26	Mean Ergodic Theorems(I)
	2009/11/2	Mean Ergodic Theorems(II)
	2009/11/9	Central limit theorems
	2009/11/16	midterm
	2009/11/23	How to characterize the correlation structure of a stochastic process?
	2009/11/30	Empirical/sample/time average (mean)
	2009/12/7	Borel-Cantelli theorem
	2009/12/14	White Gaussian noise
	2009/12/21	Markov property
	2009/12/28	Classification of stochastic processes(I)
	2010/1/4	Classification of stochastic processes(II)
	2010/1/11	Classification of stochastic processes(III)
	2010/1/18	Final
七、評量方式**(Evaluation)**	平常成績:20% 報告成績:80%	
八、講義位址**(http://)**		
九、教育目標		

重新查詢