



# 課 綱 Course Outline

## 應用數學系統計組

中文課程名稱 Course Name in Chinese	隨機模型				
英文課程名稱 Course Name in English	Stochastic Models				
科目代碼 Course Code	AM_40200	班 別 Degree	學士班 Bachelor's		
修別 Type	學程 Program	學分數 Credit(s)	3.0	時 數 Hour(s)	3.0
先修課程 Prerequisite	基礎機率，機率論 Introduction to Probability, Probability theory.				
課程目標 Course Objectives					
介紹Poisson 過程，連續時間馬可夫過程、重要例子、基本理論等。 Poisson process, continuous time Markov Chains. Theory And examples.					
系教育目標 Dept.'s Education Objectives					
1	訓練嚴謹思考與推理能力。 To provide a solid training in rigorous thinking and reasoning ability.				
2	奠定理論與應用數學的基礎知識。 To establish well-founded background knowledge in pure and applied mathematics.				
3	具備跨領域學習能力。 To prepare the students for interdisciplinary study in the future.				
系專業能力 Basic Learning Outcomes				課程目標與系專業能力 相關性 Correlation between Course Objectives and Dept.'s Education Objectives	
A	具備基本數學知識及邏輯推理能力。 Have well-founded background in mathematics and be capable of logical reasoning.			●	
B	具備機率、統計及相關領域的知識與應用能力。 Have the knowledge of probability and statistics and the related field, and the corresponding application ability.			●	
C	具備軟體應用與統計計算能力。 Be able to use computer software for statistical computation in real applications.				
圖示說明Illustration : ● 高度相關 Highly correlated ○ 中度相關 Moderately correlated					

課程大綱  
Course Outline

1. Poisson 隨機過程
2. 生滅過程
3. 連續時間馬可夫鏈
4. Kolmogorov 方程
5. 平穩分佈
6. 遍歷性定理
7. 選題

1. Poisson process
2. Birth and death process
3. Continuous time Markov Chains
4. Kolmogorov' s backward and forward eqt.
5. Stationary distribution
6. Ergodic theorem
7. Selected topics

資源需求評估(師資專長之聘任、儀器設備的配合．．．等)

Resources Required(e.g. qualifications and expertise, instrument and equipment, etc.)

本系(所)專任教師

課程要求和教學方式之建議

Course Requirements and Suggested Teaching Methods

講授、習題、考試

Lectures, problem sets and examinations.

其他

Miscellaneous

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規劃負責老師：

單位主管：

系課程委員會審議通過日期：