Please consult Intellectual Property Rights before making a photocopy. Please use the textbook of copyrighted edition.

# ②國玄東華大學

## 課 網 Course Outline

### 應用數學系統計科學組

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	AM40200	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 Proba	ability, Prob	obability 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.					
-	·	教育目標 ucation Objec	etives		
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	
具備基本數學知識及邏輯推理能力。 A Have well-founded background in mathematics and be capable of logical reasoning.					•
具備機率、統計及相關領域的知識與應用能力。 B Have the knowledge of probability and statistics and the related field, and the corresponding application ability.					•
具備軟體應用與統計計算能力。 C 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

Taught by department's faculty member

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

撰寫人:應用數學系 謝思民

撰寫日:100年4月