



教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	隨機模型AB		學年/學期 Academic Year/Semester	114/2	
課程名稱(英文) Course Name in English	Stochastic Models				
科目代碼 Course Code	AM_4020AB	系級 Department & Year	學三	開課單位 Course-Offering Department	應用數學系
修別 Type	學程 Program	學分數/時間 Credit(s)/Hour(s)	3.0/3.0		
授課教師 Instructor	/王家禮				
先修課程 Prerequisite	/#基礎機率				
課程描述 Course Description					
<p>This is the first course in applied probability of operations research. We will review basic applied probability tools, such as conditioning technique, and introduce a few common stochastic models that include Markov chains and Poisson processes. My approach to teach this course is always to motivate the student by examples, whereas theory and proofs will be kept to a minimum. The approach is, thought, heuristic and non-rigorous, it attempts to develop students' intuition, which, hopefully, will enable students to think probabilistically and enhance their ability of modeling.</p>					
課程目標 Course Objectives					
<p>介紹離散時間馬可夫過程、重要例子、基本理論等。 Discrete time Markov Chains. Theory and examples.</p>					
圖示說明 Illustration : ● 高度相關 Highly correlated ○ 中度相關 Moderately correlated					
授課進度表 Teaching Schedule & Content					
週次 Week	內容 Subject/Topics			備註 Remarks	
1	Review of Elementary Probability				
2	Review of Conditional Probability				
3	Review of Conditional Probability				
4	Discrete-Time Markov Chains				
5	Discrete-Time Markov Chains				
6	Discrete-Time Markov Chains				
7	Discrete-Time Markov Chains				
8	Discrete-Time Markov Chains				
9	期中考試週 Midterm Exam				
10	Review of Exponential Distribution				
11	Review of Exponential Distribution				
12	Poisson Process				

13	Poisson Process	
14	Poisson Process	
15	Continuous-Time Markov Chains	
16	Continuous-Time Markov Chains	
17	期末考試週 Final Exam	
18	Optional Topics	

教學策略 Teaching Strategies

- 課堂講授 Lecture
 分組討論 Group Discussion
 參觀實習 Field Trip
 其他 Miscellaneous:

教學創新自評 Teaching Self-Evaluation

創新教學 (Innovative Teaching)

- 問題導向學習 (PBL)
 團體合作學習 (TBL)
 解決導向學習 (SBL)
 翻轉教室 Flipped Classroom
 磨課師 Moocs

社會責任 (Social Responsibility)

- 在地實踐 Community Practice
 產學合作 Industry-Academia Cooperation

跨域合作 (Transdisciplinary Projects)

- 跨界教學 Transdisciplinary Teaching
 跨院系教學 Inter-collegiate Teaching

- 業師合授 Courses Co-taught with Industry Practitioners

其它 other:

學期成績計算及多元評量方式 Grading & Assessments

配分項目 Items	配分比例 Percentage	多元評量方式 Assessments							
		測驗 會考	實作 觀察	口頭 發表	專題 研究	創作 展演	卷宗 評量	證照 檢定	其他
平時成績(含出缺席) General Performance (Attendance Record)									
期中考成績 Midterm Exam	30%								
期末考成績 Final Exam	30%								
作業成績 Homework and/or Assignments	40%								
其他 Miscellaneous (_____)									

評量方式補充說明

Grading & Assessments Supplemental instructions

教科書與參考書目 (書名、作者、書局、代理商、說明)

Textbook & Other References (Title, Author, Publisher, Agents, Remarks, etc.)

Introduction to Probability Models, 12th Ed., Sheldon Ross

課程教材網址(含線上教學資訊, 教師個人網址請列位於本校內之網址)

Teaching Aids & Teacher's Website(Including online teaching information.
Personal website can be listed here.)

其他補充說明 (Supplemental instructions)

Pre-requisite Course : Calculus and fundamental probability course