



## 教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	廣義統計線性模型		學年/學期 Academic Year/Semester	114/2	
課程名稱(英文) Course Name in English	Generalized Linear Models				
科目代碼 Course Code	AM_73000	系級 Department & Year	博士	開課單位 Course-Offering Department	應用數學系
修別 Type	選修 Elective	學分數/時間 Credit(s)/Hour(s)	3.0/3.0		
授課教師 Instructor	/簡立欣				
先修課程 Prerequisite					
課程描述 Course Description					
Learn the principles and applications of regression models.					
Learn how to use R software to build models, perform diagnostics, and present results.					
課程目標 Course Objectives					
<p>類別資料廣泛出現在生物醫學、民意調查、商業及社會科學研究領域。廣義線性模型正是處理這類資料的重要統計方法。這門課將有系統地介紹常用的廣義線性模型之建構、相關參數估計、推論以及詮釋等主題。希冀學生修完後，對標準的類別資料可以分析處理詮釋；對結構較為特殊的資料，能夠參考文獻，修正現行方法而提出方向正確的建議。</p> <p>Categorical variables are present in many application fields such as biomedical science, sample survey, social science and business. Generalized Linear Model is the dominating statistical method for data sets arising from these subject fields. Both theoretical and application aspects of Generalized Linear Model will be discussed. Also implementation, interpretation and implication for GLIM statistical analysis will be addressed.</p>					
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	具備專業知識及邏輯推理能力。Have well-founded expertise and be capable of logical reasoning.				●
B	具備學習其它學科的能力，以期能邁向跨領域研究。 Be able to study other fields of science so as to conduct interdisciplinary research in the future.				○
C	具備獨立思考與解決問題的能力。 Be capable of independent thinking and have the problem-solving skills.				●
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	Introduction				
2	Linear Regression Model				
3	Linear Regression Model				

4	Binary Response	
5	Binary Response	
6	Binary Response	
7	Binary Response (Day off on April 7)	
8	Binary Response	
9	期中考試週 Midterm Exam	
10	Count Regression	
11	Count Regression	
12	Count Regression	
13	Multinomial Data	
14	Multinomial Data	
15	Trees	
16	Trees	
17	Final Report	
18	Self-directed learning week	

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:

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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)	10%								
期中考成績 Midterm Exam	30%								
期末考成績 Final Exam	30%								
作業成績 Homework and/or Assignments	30%								
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.)

Faraway, J. J. (2016). Extending the linear model with R: Generalized linear, mixed effects and nonparametric regression models (2nd ed.). Chapman & Hall/CRC Texts in Statistical Science.

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)