



課 綱 Course Outline
經濟學系碩士班國際組

中文課程名稱 Course Name in Chinese	資料科學				
英文課程名稱 Course Name in English	Data Science				
科目代碼 Course Code	EC__M5700	班 別 Degree	碩士班 Master' s		
修別 Type	選修 Elective	學分數 Credit(s)	3.0	時 數 Hour(s)	3.0
先修課程 Prerequisite					
課程目標 Course Objectives					
1、Manipulating data for analysis 2、Visualizing data for analytical purpose 3、Utilizing different statistical tools to analyze data					
系教育目標 Dept.' s Education Objectives					
1	培育具學術深造潛力及實務發展能力的優秀經濟人才。 Educate postgraduate students with professional knowledge and empirical skills for further academic research.				
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	數理分析能力：通曉經濟學的進階理論技巧，應用數學與賽局解決經濟議題的能力。 Mathematical analysis skills: Mastering in intermediate application of mathematical theories and game theory in analyzing economic issues.			●	
B	實證經濟分析能力：通曉經濟學的進階實證技巧，善用資訊科技進行資訊蒐集、資料統計與計量分析。 Empirical analysis skills: Mastering in intermediate application of statistics and econometrics in data collection and examination.			●	
C	微觀經濟之闡釋能力：通曉進階個體經濟學相關的理論與應用。 Microeconomic perspective: Thorough understanding of intermediate microeconomic theories and relevant application.			○	

D	宏觀經濟之闡釋能力：通曉進階總體經濟學相關的理論與應用。 Macroeconomic perspective: Thorough understanding of intermediate macroeconomic theories and relevant application.	
E	自我調整適應社會之能力：具備適應現代社會的學養以及就業能力。 Employment opportunities: capabilities of working on important policy and decision challenges in business and government	
F	溝通表達能力：思路清晰，有能力與人溝通並撰寫進階專業研究報告。 Communication skills: Having a clear mind and capability in writing an intermediate professional academic report.	○
圖示說明Illustration：● 高度相關 Highly correlated ○ 中度相關 Moderately correlated		
課程大綱 Course Outline		
1、Introduction to R 3、R data structure 4、R visualization (1)) 5、R visualization (2) 6、R library for data manipulation (1) 7、R library for data manipulation (2) 8、Writing R code 9、Writing R function 10、Data analysis – statistical fundamentals 11、Linear regression 12、Classification 13、Resampling 14、Linear model selection 15、Non-linear model 16、Decision tree		
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.)		
課程要求和教學方式之建議 Course Requirements and Suggested Teaching Methods		
其他 Miscellaneous		