②国o支束華大學 教學計劃表 Syllabus

	名稱(中文) me in Chinese	機器學習				學年/學期 Academic Year/Ser	111/2		
	課程名稱(英文) Course Name in English machine learning								
	科目代碼 Course Code EC_D014		余級 Department 博士 & Year			開課單位 Course-Offering Department		經濟學系	
	修別 Type選修 Elective學分數/時間 Credit(s)/Hour(s)3.0/2							3.0	
	授課教師 Instructor /李同龢								
	先修課程 Prerequisite								
課程描述 Course Description									
This class intends to introduce students for basic techniques in machine learning using Python. This class will familiarize students with a broad cross-section of models and algorithms for machine learning, and prepare students for research or industry application of machine learning techniques.									
	課程目標 Course Objectives								
 1 · How to apply supervised learning methods to data analysis 2 · How to apply unsupervised learning methods to data analysis 3 · Use actual dataset to build up analytical capacity 									
系專業能力							Cor	程目標與系專業能 力相關性 relation between urse Objectives and Dept.'s Education Objectives	
 數理分析能力:通曉經濟學的高階理論技巧,應用數學與賽局解決經濟議題的能力Mathematical A analysis skills: Mastering in advanced application of mathematical theories and game theory in analyzing economic issues 								•	
 實證經濟分析能力:通曉經濟學的高階實證技巧,善用資訊科技進行資訊蒐集、資料統計與計量 B 分析。Empirical analysis skills: Mastering in advanced application of statistics and econometrics in data collection and examination 									
	C 微觀經濟之闡釋能力:通曉高階個體經濟學相關的理論與應用Microeconomic perspective:							\bigcirc	
D 宏觀經濟之闡釋能力:通曉高階總體經濟學相關的理論與應用Macroeconomic perspective: Thorough understanding of advanced macroeconomic theories and relevant application									
 樂活能力:具備適應現代社會的高階學養以及就業能力Employment opportunities: Capabilities of advanced working on important policy and decision challenges in business and government 									
溝通表達能力:思路清晰,有能力與人溝通並撰寫高階專業研究報告Communication skills:FHaving a clear mind and profound ability in presenting advanced professional academic research								0	
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	次Week 內容 Subject/Topics					備註Remarks			
1	Introduction an	nd Crash course	Crash course of Python						
2	Crash course of	Python	Python						
3	No class, natio	nal holiday,							

4	Simple ML classification algorithms						
5	Scikit-learn for ML classification						
6	Data processing for training sets						
7	Dimensionality reduction						
8	No class, holiday						
9	Midterm project presentation,						
10	Model evaluation and hyperparameter tuning						
11	Ensemble learning						
12	Sentiment analysis						
13	Web application						
14	Regression						
15	Clustering analysis						
16	Artificial neural network and TensorFlow						
17	Final project presentation						
18	flexible week						
教 學 策 略 Teaching Strategies							
✓ 課堂講授 Lecture 分組討論Group Discussion 參觀實習 Field Trip							
↓ ↓他Miscellaneous:							
	教 學 創 新 自 評 Teaching Self-Evaluation						
	Innovative Teaching)						
副制領教学(Thilovative Teaching) 同題導向學習(PBL) 國體合作學習(TBL) 解決導向學習(SBL)							
□ 副體目 [7] 副 10 [1] 「一」 「「」 「「」 「「」 「」 「」 「」 「」 「」 「」 「」 「」 「」							
社會責任(Social Responsibility)							
「在地實踐Community Practice」							
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	配分比例	今日初日 多元評量方式 Assessments								
1 I tems	Percentage	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 General Performance										
期中考成績 Midterm Exam	35%		~							
期末考成績 Final Exam	35%		~							
作業成績 Homework and/or Assignments	30%		~							
其他 Miscellaneous ()										
評量方式補充說明 Grading & Assessments Supplemental instructions										
Class etiquette: Experience indicates that students with regular attendance of class have higher grades than those who did not. Followings are basic class etiquette. Turn off your mobile phone before class. No iPad, smart phone and laptop computer are allowed to use during lecture, unless with permission from me. No loud chatting allowed in the class. Having food or drink in the class is not encouraged. No video or audio recording is not allowed. Picture taking by any electronic devices is forbidden as well. Any irrational behavior in the class will not be tolerated. Any violation of the class etiquette will be penalized by reduction in your grade. Three strikes, you' re out: If you missed three classes without any official excuses, your semester grade will be D or below D. You need an official document for not attending class. No oral or email excuses will be accepted. Therefore, please do not email me that you could not come to class, just give me the official document.										
Textbook & Otl	教科書與參考 her Reference							ks, etc.)	
Introduction to Statistical Learning with applications in R (ISLR), James, Witten, Hastie and Tibshirani, 8th printing										
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)										