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②國玄東華大學

教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	資料科學				學年/學期 Academic Year/Semester		111/1	
課程名稱(英文) Course Name in English	Data Science							
科目代碼 Course Code	EC50420	系級 Department 碩士 & Year		-	開課單位 Course-Offering Department	ourse-Offering 經濟學		
修別 Type	必修 Required	學分數/時間 Credit(s)/Hour(s)			3.0/3.0			
授課教師 Instructor	/李同龢							
先修課程 Prerequisite								
rrerequisite		for heads of	_					

課程描述 Course Description

Data Science is the study of the generalizable extraction of knowledge from data. Data scientist use those studies to make predictions and find insights from the data. In this class R is the primary tool to do the analytical works. I will introduce various methods in three major areas which are data manipulation, visualization and fundamental statistical learning.

課程目標 Course Objectives

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	R Basic	
3	Data wrangling	
4	No class, national holiday	
5	Graphics and Statistical learning, ISL, Ch. 2	
6	Linear regression, ISL, Ch. 3	
7	Classification, ISL, Ch. 4	
8	Resampling methods, ISL, Ch. 5	
9	Midterm project presentation	
10	Linear model selection and regularization, ISL, Ch. 6	
11	Moving beyond linearity, ISL, Ch. 7	
12	Tree-based methods, ISL, Ch. 8	
13	Support vector machine, ISL, Ch. 9	
14	Unsupervised learning, ISL, Ch. 10	
15	Association analysis	

16	Neural networks and deep learning						
17	Text mining						
18	Project presentation						
	教學策略 Teaching Strategies						
✓ 課堂講	授 Lecture						
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						
社會責任(Social Responsibility)							
□ 在地實踐Community Practice □ 產學合作 Industy-Academia Cooperation							
一 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 othe	r:						

學期成績計算及多元評量方式 Grading & Assessments										
配分項目	配分比例 Percentage	多元評量方式 Assessments								
Items		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)	20%		~							
期中考成績 Midterm Exam										
期末考成績 Final Exam										
作業成績 Homework and/or Assignments	40%		~							
其他 Miscellaneous (Project)	40%		~		~					

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.)

Recommended Textbook: Introduction to Statistical Learning (ISL), James, Witten, Hastie and Tibshirani, 2017.

R for Data Science, Grolemund and Wickham, r4ds.had.co.nz

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)

 $\label{thm:condition} \mbox{Teaching Aids \& Teacher's Website} (\mbox{Including online teaching information.}$

Personal website can be listed here.)

Online class, if any.

https://meet.google.com/wxm-xmtn-yqj

其他補充說明(Supplemental instructions)