## ② 国立東華大學 教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese 課程名稱(英文) Course Name in English 科目代碼 Course Code	大數據統計分析 Statistical An	nalysis of Big	g Data	學年/學期 Academic Year/Sen	nester	110/2			
Course Name in English 科目代碼	Statistical An		g Data						
			Statistical Analysis of Big Data						
	FIN_52690	系級 Department & Year	碩士	開課單位 Course-Offering Department	財務金融學系				
修別 Type	選修 Elective	學分數/時間 Credit(s)/Hou		3.	3.0/3.0				
授課教師 Instructor	/林金龍								
先修課程 Prerequisite									
	課:	程描述 Course	e Descri	ption					
Big Data is a broad term for applications are inadequated It offers promises for disc possible with small data. Yet, the huge sample size a statistical challenges, including scalability and se endogeneity and measurement These challenges demand new This course focuses on the and statistical methods to meet the challenges. It cor Big Data and the architecture for the essential for effective analysis of Big A/B testing, crowdsourcing, language processing, signal processing, simulatifier learning. As almost financial data is mining. Text mining is the focus of Data. Popular textming techniques clustering, concept linkaged information visualization, algorithms including k nearest neighbor, suppor includes the empirical application of Big Data ar could complete analyzing one real big data millions domestic flights i	e. covering subtle and high dimens storage bottler t errors. w computational salient featur hsists of five he analysis. Du Data. The secce data fusion ar ion, time serie s in the format f the four part s include infor e, and association rt vector machi halytics. One of taset. The airl in US	e population p sionality of F neck, noise ac l and statisti ces of Big Dat parts. The fi ue to its huge ond part cove nd integration es analysis, w t of time seri t as it become cmation extract on rule mining ine, Bayesian cannot really line data incl	batterns Big Data ccumulati ical meth ical meth ical meth ist part e sample ers popul n, geneti visualisa ies, the es more a ction, to g. We sha n classif master H ludes on-	and heterogeneities create unique compu- on, spurious correl nods. eviews newly propose c overviews the main size, the hardware ar methods for data c algorithms, machi- ation. tensors, mult third part focuses and more important f opic tracking, catego all cover commonly u fier and K-mean clus Big Data technology	s that are itational ation, in ed data are and soft a mining ine learn tilinear upon time for finan- gorization used text stering. I unless he more that	e not and ncidental nalytical eristics of ware are including ing, natural subspace e series cial Big n, mining Final part e or she an 120			

		課程目標 Course Objectives	
用傳:	統的統 軟體;;	2特性:(1)數據量巨大;(2)數據類型多樣;(3)數據快數累積;(4)數據價值 計方法來分析。本課程針對大數據特性所發展的統計方法做系統性的介紹,包含大 大數據統計模型的建立與分析方法;大數據分析結果的呈現、說明與視覺化;及大 所大數據的統計能力。	數據計算平台,架構與
		糸專業能力 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	具備則	務金融的分析能力	•
В	具備企	*業財務管理專業能力	0
С	具備英	語閱讀溝通協調等能力	0
D	具備獲	立研究之技能,以進行財金議題研究	•
E	具備個	1人投資理財能力	
F	具備電	腦程式運算及設計能力	
圖示	說明[]	lustration :● 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 to Big data and R	
	2	Big Data Basics (I)	
	3	Big Data Basics (II)	
	4	Pattern recognition and association (I)	
	5	Pattern recognition and association (II)	
	6	Classifcation (I)	
	7	Classifcation (II)	
	8	Classifcation (III)	
	9	期中考試週 Midterm Exam	
]	0	Clustering (I)	
]	1	Clustering (II)	
]	2	Outlier dectection	
]	3	Time series mining (I)	
]	4	Time series mining (II)	
]	5	Time series mining (III)	
]	6	Finance applications	
]	7	Project presentation (I)	
]	8	Project presentation (II)	

教學策略 Teaching Strategies
✓ 課堂講授 Lecture ✓ 分組討論Group Discussion 参觀實習 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)
─ 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 Industy-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:

ave	essmen	實作 觀察 ✓ ✓	□ 頭 一 頭 表 一 二 ゴ 五 辺 弱 表 一 二 ゴ 五 つ ジ 表 一 一 ゴ し 二 一 二 一 二 一 二 一 二 一 二 一 二 一 二 一 二 一 二 一 二 二 二 二 二 二 二 二 二 二 二 二 二	多元評 專題 研究 ✓	量方式 A 創作 展演	SSESSME 卷宗 評量	nts 證照 檢定	其他
age 测 會	會考 平: essmen	<ul> <li>觀察</li> <li>✓</li> <li>量方式</li> </ul>	發表	·研究				其他
	essmen	量方式		~				
	essmen			~				
	essmen			~				
	essmen			~				
	essmen		補充證明					
	essmen		補充說明					
		ato Sur						
cussion {	E 0.0/		-	al inst	ruction	IS		
	30%,	Proje	ect 50%					
ま参考書 E rences(1							ks, etc.	)
-, and Ji s, , 2012		Pei, ∖t	extbf{D	ata Min	ing: Co	ncepts a	and Tecł	nniques}, 3rd
enwell (2 e.github.		) Hands	-On Mac	hine Le	arning	with R,	CRC pre	ess,
ark A. Ha n Kaufman prary n, Text M g: Exampl	ann Pu Minin	ıblishe ng Appl	ers, 201 ication	1, s and T	heory,	John Wi	ley 2010	
orary 含線上教	教學資	訊,教師	币個人網:	址請列位	1於本校	內之網址	_)	
cher's W	Websit	te(Incl	luding c	online t	eaching			
	說明(	Supple	mental	instruc	tions)			
他補充說								
他補充說								
ac	acher's Personal	acher's Websi Personal webs	acher's Website(Inc Personal website can	acher's Website(Including c Personal website can be lis	acher's Website(Including online t Personal website can be listed her		acher's Website(Including online teaching inform Personal website can be listed here.)	