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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	時間序列分析與	丹 預測		學年/學期 Academic Year/Semester		112/2	
課程名稱(英文) Course Name in English	Time series analysis and forecasting						
科目代碼 Course Code	BM85350	系級 Department 博士 (& Year		開課單位 Course-Offering Department	企業管理學系		
修別 Type	選修 Elective	學分數/時間 Credit(s)/Hour(s)		3.0/3.0			
授課教師 Instructor	/張漢利						
先修課程 Prerequisite							

課程描述 Course Description

This Time Series and Forecasting course is structured to provide students with a thorough grounding in the analysis of time-dependent data and the application of forecasting techniques. The curriculum covers a broad spectrum of topics, from basic statistics and visualization to advanced forecasting methods, including ARIMA, seasonality forecasting, and exponential models. It also integrates cutting -edge approaches using machine learning, deep neural networks, and convolutional models for time series analysis. The course is punctuated with practical sessions for applying learned techniques, a midterm project to assess comprehension and application, and a final presentation to showcase students' forecasting projects. Scheduled breaks and a consultation week are included to enhance learning outcomes and address individual queries.

課程目標 Course Objectives

The course aims to introduce the essential knowledge related to time series analysis and forecasting, such as statistics, regression analysis, exponential smoothing, ARIMA modeling, and machine learning. By the end of the course, the students are expected to develop practical skills to analyze time series data effectively and be able to model forecasting problems and anomaly detection in time series.

	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	培育具備資訊管理相關理論與應用的知識Cultivate the knowledge of information management application	0
В	培育具備邏輯推演、問題解決與獨立研究的能力Cultivate the capability of logical deduction, problem solving and independent research	•
С	培養具備資訊專業知識與技能Cultivate the professional ability and skill regarding information	•
D	培養具備資訊科技與管理領域之知識整合應用能力Cultivate the integrated ability regarding information technology and management	•
Е	培養具備創新思維、領導智能與國際觀的能力Cultivate the ability regarding innovative thinking, leadership and international view	0
圖示	說明Illustration :● 高度相關 Highly correlated ○中度相關 Moderately co	orrelated

授課進度表 Teaching Schedule & Content

備註Remarks

內容 Subject/Topics

週次Week

1

Orientation

2	Handling date and time data						
3	Handling missing data						
4	Exploratory data analysis						
5	Basic forecasting						
6	Statistical methods I						
7	Statistical methods II						
8	Holiday						
9	期中考試週 Midterm Exam						
10	Machine learning for time series						
11	Deep neural networks						
12	Recurrent neural networks						
13	Convolutional models						
14	Paper presentation						
15	Consultation week						
16	Final presentation						
17	Holiday						
18	Tentative teaching						
	教 學 策 略 Teaching Strategies						
✓ 課堂講	授 Lecture	Field Trip					
其他Mis	scellaneous:						
	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	로필(SBL)					
Manual							
社會責任(Social Responsibility)						
□ 在地實踐Community Practice □ 產學合作 Industy-Academia Cooperation							
□ 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 General Performance	10%								
期中考成績 Midterm Exam	15%								
期末考成績 Final Exam	35%								
作業成績 Homework and/or Assignments	25%								
其他 Miscellaneous	15%								

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.)

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)