國立東華大學

教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	數據科學導論			學年/學期 Academic Year/Semester	113/1
課程名稱(英文) Course Name in English	Introduction to Data Science				
科目代碼 Course Code	IM__33690	系級 Department & Year	學三	開課單位 Course-Offering Department	資訊管理學系
修別 Type	學程 Program	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 English-taught course provides a fundamental overview of data science and is designed for students with a background in information management or other management-related disciplines. The curriculum framework is intended to be inclusive for students with limited programming experience, while possessing programming skills will accelerate learning progress. The course provides comprehensive review on the fundamental principles of data science and practical experience through hands-on projects and case studies. The course can be taken for students from any discipline interested in developing fundamental data science skills for management decision-making.

課程目標 Course Objectives

The objective of this course is to introduce data science and its application to management decision-making. The course covers data exploration and cleaning, basic statistics, data visualization, and machine learning. Central to the course is its focus on the practical application of data science in informing management decisions. The course emphasizes both theoretical knowledge and extensive Python hands-on programming exercises.

	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	具備資訊管理基礎與跨學域的應用能力。Cultivate the personnel with the capability of basic and interdiscipline information management	●
B	具備以資訊科技為核心，擁有高度專業技術與國際視野之能力。Cultivate professional personnel with international perspective and the capability of using information technology	●
C	具備資訊管理創新、研發、企劃之資訊管理人才之整合能力。Cultivate senior personnel with the capability of innovation, research and development and integrated planning	○
D	具備企業資訊化的能力。Cultivate the personnel with the capability of computerization of enterprises	○
E	具備業界多媒體應用、網站經營以及資訊行銷所需之能力。Cultivate the personnel with the capability of multimedia applications, website operations, and information marketing	○
F	具備認知新興資訊產業發展所需之能力。Cultivate the personnel with the capability for the emerging information industry	○

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	Orientation	

2	Python review	
3	Data exploration	
4	Basic statistics	
5	Data visualization	
6	Data visualization	
7	Introduction to machine learning	
8	Supervised methods	
9	期中考試週 Midterm Exam	
10	Supervised methods	
11	Unsupervised methods	
12	Unsupervised methods	
13	Introduction to data mining	
14	Time series data mining	
15	Natural language processing	
16	Recommendation systems	
17	Network analysis	
18	期末考試週 Final Exam	

教 學 策 略 Teaching Strategies

☐ 課堂講授 Lecture ☐ 分組討論Group Discussion ☐ 參觀實習 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) ☐ 團體合作學習(TBL) ☐ 解決導向學習(SBL)

☐ 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: _____

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

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)