

系所課程地圖 Department Curriculum Map

系所概要 Department

系所名稱 Department Name	大數據產學研發博士學位學程 Doctoral Program in Big Data Analytics for Industrial Applications
班別 Division	博士班 Doctoral Program

教育目標 Education Goals

編號 Number	項目內容 Content
1	培養具有專業知識、表達能力、應變能力與國際觀之數據科學人才。
1	To cultivate data scientists with professional knowledge, expressive ability, responsiveness and international outlook.
2	培養具有理論與應用能力兼備之計算科學之人才。
2	To cultivate human resources with both theoretical and applied skills in computational science.
3	培養具有理論與應用能力兼備之大數據分析之人才。
3	To cultivate talents with both theoretical and applied skills in big data analysis.
4	培養具有理論與應用能力兼備之資訊科學之人才。
4	To develop human resources with both theoretical and applied skills in information science.
5	培養具有理論與應用能力兼備之統計分析之人才。
5	This program is designed to develop human resources with both theoretical and applied skills in statistical analysis.

承辦人簽章 Signature of Responsible Person :

規劃單位主管簽章 Head of Planning Division :

Date : 113.12.18 - 1 -

系所課程地圖 Department Curriculum Map

系所概要 Department

系所名稱 Department Name	大數據產學研發博士學位學程 Doctoral Program in Big Data Analytics for Industrial Applications	
班別 Division	博士班 Doctoral Program	
學生核心能力 Student Core Competencies		
編號 Number	項目內容 Content	對應教育目標編號 Corresponding Education Goal Number
A	數學專業思維與邏輯推理知識	1234
A	Mathematical Thinking and Logic	1234
B	人工智慧理論與應用專業知識	12345
B	Artificial Intelligence Theory and Application Expertise	12345
C	大數據理論與應用專業知識	12345
C	Expertise in Big Data Theory and Applications	12345
D	機器學習與深度學習應用於實務數據分析	12345
D	Machine Learning and Deep Learning for Practical Data Analysis	12345
E	智慧運算模型建構與軟體應用	12345
E	Intelligent Computing Modeling and Software Applications	12345
F	資訊安全專業知識	12345
F	Information Security Expertise	12345
G	統計數據分析專業知識	1235
G	Statistical data analysis expertise	1235
H	外文文獻研討	12345
H	Literature Review	12345

※附註 Note :

- 1.各系所所屬之班別，含學士班、碩士班、博士班等，請分別填寫。
- 1.Complete the map separately for each division, including Bachelor's, Master's, and Doctoral program.

例如：資管學士班需填寫表二及表三；資管碩士班也須填寫表二及表三。

For example, Forms 2 and 3 must be completed for Bachelor's program in Management Information Systems, and also for Master's program in for Bachelor's program in Management Information Systems.

- 2.教育目標及核心能力之代號皆以英文字母大寫為主。
- 2.Codes for Education Goals and Core Competencies must be in uppercase English alphabet letters.
- 3.可依不同班（組）別填寫教育目標及核心能力。
- 3.Education Goals and Core Competencies can be specific to the division in question.

承辦人簽章 Signature of Responsible Person :

規劃單位主管簽章 Head of Planning Division :

Date : 113.12.18 - 2 -

大數據產學研發博士學位學程 Doctoral Program in Big Data Analytics for Industrial Applications
 學士班 Bachelor's Program 碩士班 Master's Program 博士班 Doctoral Program
 碩專班 Master's Degree Program 國際專班 International Program 進修學士班 Bachelor Part-Time Program
課程規畫表 Curriculum Plan

中文課程名稱 Course Title in Chinese	英文課程名稱 Course Title in English	規劃要點 (附註) Plans (Notes)				對應核心能力編號 Corresponding Education Goal Number	建議修課年級 Recommended Course Division	開課單位 Course Offering Unit	備註 Remarks
		1	2	3	4				
院核心課程(若無免填，請加註必修、選修) College Core Courses (not required if none, otherwise please indicate Required Courses and Elective Courses)									
必修課程 Required Courses									
博士論文	Dissertation	D	C	Y	12	A25B25C25H25	2	大數據學程 Doctoral Program in Big Data Analytics for Industrial Applications	
專題演講 (一)	Seminar(I)	M	C	Y	0	A20B20C20D20E20	1	大數據學程 Doctoral Program in Big Data Analytics for Industrial Applications	

※附註：規劃要點填表說明：（1 到 4 各欄位請填正確代表字母）
 Note: Instructions for completing this form are provided below (please provide the correct English alphabet letters in fields 1 to 4)

- 1: U-學士課程、M-碩士課程、D-博士課程。 1: U-Bachelor's program, M-Master's program, D-Doctoral program.
- 2: A-正課、B-實習課、C-台下指導之科目如學生講述或邀請演講之專題討論、專題研究.....等。
 2: A-Lecture, B-Internship, C-Subjects with private guidance such as student presentations or invited speeches, topic discussions, topic research, etc.
- 3: S-學期課、Y-學年課。 3: S-Semester course, Y-Year-long course.
- 4: 科目（全期或全年）總學分數（請填阿拉伯數字）。 4: Total course (full-semester or full-year) credits (in Arabic numerals).

承辦人簽章 Signature of Responsible Person :

規劃單位主管簽章 Head of Planning Division :

大數據產學研發博士學位學程 **Doctoral Program in Big Data Analytics for Industrial Applications**
 □學士班 Bachelor's Program □碩士班 Master's Program ■博士班 Doctoral Program
 □碩專班 Master's Degree Program □國際專班 International Program □進修學士班 Bachelor Part-Time Program
課程規畫表 Curriculum Plan

中文課程名稱 Course Title in Chinese	英文課程名稱 Course Title in English	規劃要點 (附註) Plans (Notes)				對應核心能力編號 Corresponding Education Goal Number	建議修課年級 Recommended Course Division	開課單位 Course Offering Unit	備註 Remarks
		1	2	3	4				
選修課程 Elective Courses									
專題演講 (二)	Seminar(II)	M	C	Y	0	A10B10C20D20E10F10G10H10	2	應數系 Department of Applied Mathematics	
計算科學	Computational Science	M	A	S	3	A50F50	1	資料所 Graduate Institute of Data Science and Information Computation	
雲端運算虛擬化技術	Virtualization Technology for Cloud Computing	M	A	S	3	A50F50	1	資料所 Graduate Institute of Data Science and Information Computation	
雲端運算與行動平台	Cloud Computing and Mobile Platforms	M	A	S	3	A50F50	1	資料所 Graduate Institute of Data Science and Information Computation	
數據科學方法	Fundamental Methodology for Data Science	M	A	S	3	A30C40F30	1	資料所 Graduate Institute of Data Science and Information Computation	
數學建模與數據分析	Mathematical Modeling and Data Analysis	M	A	S	3	A25C25E25F25	1	資料所 Graduate Institute of Data Science and Information Computation	
數據挖掘與視覺化	Data Mining and Visualization	M	A	S	3	A25C25E25F25	1	資料所 Graduate Institute of Data Science and Information Computation	
機器學習	Machine Learning	M	A	S	3	A25B25D25F25	1	資料所 Graduate Institute of Data Science and Information Computation	
數值最佳化	Numerical Optimization	M	A	S	3	A30C40F30	1	資料所 Graduate Institute of Data Science and Information Computation	
結構化機器學習模型及其應用	Structural Machine Learning Models and Their Applications	M	A	S	3	A25B25D25F25	1	資料所 Graduate Institute of Data Science and Information Computation	
迴歸分析	Regression Analysis	M	A	S	3	A25B25C25H25	1	統計所 Graduate Institute of Statistics	
統計軟體與計算	Statistical Software and Computing	M	A	S	3	A25B25C25H25	1	統計所 Graduate Institute of Statistics	
實驗設計	Experimental Design	M	A	S	3	A25B25C25H25	1	統計所 Graduate Institute of Statistics	
可靠度分析	Reliability Analysis	M	A	S	3	A25B25C25H25	1	統計所 Graduate Institute of Statistics	
應用多變量資料分析	Applied Multivariate Data Analysis	M	A	S	3	A25B25C25H25	1	統計所 Graduate Institute of Statistics	
財務時間序列分析	Financial Time Series Analysis	M	A	S	3	A25B25C25H25	1	統計所 Graduate Institute of Statistics	
長期資料分析	Longitudinal Data Analysis	M	A	S	3	A25B25C25H25	1	統計所 Graduate Institute of Statistics	
資料分析	Data Analysis	M	A	S	3	A25B25C25H25	1	統計所 Graduate Institute of Statistics	
統計品質管制	Statistical Quality Control	M	A	S	3	A25B25C25H25	1	統計所 Graduate Institute of Statistics	
巨量資料分析	Big Data Analysis	M	A	S	3	A25B25C25H25	1	統計所 Graduate Institute of Statistics	
數學影像處理	Mathematical Image Processing	M	A	S	3	A25B25E25F25	1	資料所 Graduate Institute of Data Science and Information Computation	
視覺辨識理論、實作與應用	Visual Recognition: From Theory and Implementation to Applications	M	A	S	3	A25B25E25F25	1	資料所 Graduate Institute of Data Science and Information Computation	
數據分析數學	Mathematical Analysis to Data Science	M	A	S	3	A20B20C20E20F20	1	資料所 Graduate Institute of Data Science and Information Computation	
資料庫系統設計	Database System	M	A	S	3	C30E30F40	1	資料所 Graduate Institute of Data Science and Information Computation	
區塊鏈與虛擬貨幣	Blockchain and Virtual Currency	M	A	S	3	C30E30F40	1	資料所 Graduate Institute of Data Science and Information Computation	
量子資訊安全入門	Introduction to Quantum Cybersecurity	M	A	S	3	C30E30F40	1	資料所 Graduate Institute of Data Science and Information Computation	
網路安全	Network Security	M	A	S	3	C30E30F40	1	資料所 Graduate Institute of Data Science and Information Computation	

承辦人簽章 Signature of Responsible Person :

規劃單位主管簽章 Head of Planning Division :

Date : 113.12.18 - 4 -

大數據產學研發博士學位學程 Doctoral Program in Big Data Analytics for Industrial Applications
學士班 Bachelor's Program 碩士班 Master's Program 博士班 Doctoral Program
碩專班 Master's Degree Program 國際專班 International Program 進修學士班 Bachelor Part-Time Program
課程規畫表 Curriculum Plan

中文課程名稱 Course Title in Chinese	英文課程名稱 Course Title in English	規劃要點 (附註) Plans (Notes)				對應核心能力編號 Corresponding Education Goal Number	建議修課年級 Recommended Course Division	開課單位 Course Offering Unit	備註 Remarks
		1	2	3	4				
選修課程 Elective Courses									
深度學習	Deep Learning	M	A	S	3	A25B25D25F25	1	資料所 Graduate Institute of Data Science and Information Construction	
統計數據科學與強化學習	Statistical Data Science and Reinforcement Learning	M	A	S	3	A25B25C25H25	1	統計所 Graduate Institute of Statistics	
統計數據科學與深度學習	Statistical Data Science and Deep Learning	M	A	S	3	A25B25C25H25	1	統計所 Graduate Institute of Statistics	
統計數據科學與機器學習	Statistical Data Science and Machine Learning	M	A	S	3	A25B25C25H25	1	統計所 Graduate Institute of Statistics	

※附註：規劃要點填表說明：（1 到 4 各欄位請填正確代表字母）

Note : Instructions for completing this form are provided below (please provide the correct English alphabet letters in fields 1 to 4)

- 1 : U-學士課程、M-碩士課程、D-博士課程。1: U-Bachelor's program, M-Master's program, D-Doctoral program.
- 2 : A-正課、B-實習課、C-台下指導之科目如學生講述或邀請演講之專題討論、專題研究.....等。
- 3 : S-學期課、Y-學年課。3: S-Semester course, Y-Year-long course.
- 4 : 科目（全期或全年）總學分數（請填阿拉伯數字）。4: Total course (full-semester or full-year) credits (in Arabic numerals).

承辦人簽章 Signature of Responsible Person :

規劃單位主管簽章 Head of Planning Division :

Date : 113.12.18 - 5 -