



課 綱 Course Outline

理工學院大數據科學國際學士班學士班

中文課程名稱 Course Name in Chinese	計算機概論				
英文課程名稱 Course Name in English	Introduction to Computer Science				
科目代碼 Course Code	DS__10010	班 別 Degree	學士班 Bachelor' s		
修別 Type	學程 Program	學分數 Credit(s)	3.0	時 數 Hour(s)	3.0
先修課程 Prerequisite					
課程目標 Course Objectives					
本課程的主要目的是引導學生進入資訊工程這個領域，介紹資訊工程基礎概念的核心主題，以奠基資訊工程的學習。 To explore the fundamental material needed to handle the rigor of computer science and information engineering for undergraduate students.					
系教育目標 Dept.'s Education Objectives					
1	訓練嚴謹思考與推理能力。 to provide a solid training in rigorous thinking and reasoning,				
2	奠定資料科學理論與應用數學的基礎知識。 to establish well-founded background knowledge in data science and applied mathematics,				
3	具備跨領域學習能力。 to prepare the students for interdisciplinary study in the future.				
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	具備基本資料科學知識及邏輯推理能力。 have well-founded background in data science and logical reasoning,			●	
B	具備機率、統計、資料科學及相關領域的知識與應用能力。 have the knowledge of probability , statistics , data science and the related fields, and their applications,			●	

C	具備資料科學應用技能與團隊合作，解決問題能力。 be able to utilize data scientific skills for problem solving through cooperation and teamworking.	○
圖示說明Illustration：● 高度相關 Highly correlated ○ 中度相關 Moderately correlated		
課程大綱 Course Outline		
1. History and Social Implications of Computing. 2. Computing Security and Ethics. 3. Computer Architecture. 4. Networks. 5. The Internet. 6. Database Fundamentals. 7. Numbering Systems and Data Representations. 8. Data Structures. 9. Operating Systems. 10. File Structures. 11. The Human-Computer Interface. 12. Problem Solving and Debugging. 13. Software Engineering. 14. Programming I. 15. Programming II.		
資源需求評估（師資專長之聘任、儀器設備的配合．．．等） Resources Required (e.g. qualifications and expertise, instrument and equipment, etc.)		
需相關專業教師支援教學。 Appeals to subject-area specialists for pedagogical support in teaching.		
課程要求和教學方式之建議 Course Requirements and Suggested Teaching Methods		
講授、討論與程式設計 教學以講授及討論為主，並輔以專題研究、作業及口頭報告。 This course will utilize a combination of teaching methods including lectures, discussions, and project work. Students will also be expected to complete assignments and participate in oral presentations.		
其他 Miscellaneous		
1130306訂定。 This course syllabus was approved on March 6, 2024.		