



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	初等分析				
英文課程名稱 Course Name in English	Elements of Analysis				
科目代碼 Course Code	DS__10070	班 別 Degree	學士班 Bachelor' s		
修別 Type	學程 Program	學分數 Credit(s)	4.0	時 數 Hour(s)	4.0
先修課程 Prerequisite	微積分(一)/微積分(二)				
課程目標 Course Objectives					
為微積分的進一步討論，訓練學生分析的能力和計算的技巧，培養學生抽象思考的能力 This is an advanced yet introductory course to analysis. It aims to train students to have both ability in analysis and technique in computation and to nurture ample mathematical/abstract understanding for articulation. Brief introduction to modern approach to the differential and integral calculus of functions and transformations in several variables.					
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. 簡介邏輯，集合與函數 Introduction to Logic and Basics of Sets and Functions 2. 賦距空間與緊緻集 Metric Spaces and Compact Sets 3. 極限和連續函數 Limits and continuous functions 4. 積分 Integral 5. 函數序列和函數級數 Sequences and Series of functions		
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.)		
由本系專任教師任教 This class is taught by appointed lecturers of Department of Applied Mathematics.		
課程要求和教學方式之建議 Course Requirements and Suggested Teaching Methods		
教師上課講授、學生習題演練、考試 Course is delivered by the appointed lecturer, there are assignments and exams for students.		
其他 Miscellaneous		
教科書及參考書目由任課教師訂定 Text books and reference are assigned by the lecturer		
1130308訂定		