



課 綱 Course Outline  
資訊工程學系國際組

中文課程名稱 Course Name in Chinese	資料結構				
英文課程名稱 Course Name in English	Data Structures				
科目代碼 Course Code	CSIEB0100	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					
學習 Abstract Data Type，各種基本資料結構，及相關演算法					
系教育目標 Dept.' s Education Objectives					
1	具備學科知識，養成專業技能 Acquire academic knowledge, develop professional skills				
2	學習創新思考，分析解決問題 Inspire innovative thinking, increase analytical problem solving ability				
3	培養團隊精神，學習溝通合作 Promote teamwork spirit, encourage coordination and cooperatio				
4	提昇專業倫理，承擔社會責任 Sublimate professional ethics, engage social responsibility				
5	涵育人文素養，開拓國際視野 Cultivate humanities, broaden global perspectives				
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	資訊專業終身學習能力 Profound professional knowledge and skills			●	
B	實驗驗證資訊科學能力 Sound and free spirit; simple and generous quality			●	
C	資訊工具整合運用能力 Ability to appreciate beauty and think creatively			●	

D	資訊系統應用設計開發能力 Sense of democracy, the rule of law, and civil responsibility	●
E	團隊合作溝通協調能力 Ability of communication, teamwork, and social practice	○
F	資通訊科技問題解決能力 Possess both domestic and global perspectives	○
G	瞭解資訊科技多元影響能力 Knowledgeable and possess the quality of humanism	○
H	肩負資訊人社會責任能力 Ability of verbal expression and information organization and application	

圖示說明 Illustration : ● 高度相關 Highly correlated ○ 中度相關 Moderately correlated

課程大綱  
Course Outline

- Abstract Data Types
- 演算法與分析
- 基本資料結構：陣列、堆疊與佇列、指標、串列、遞迴觀念與實例、樹、Heaps 與 Priority Queues、Graphs
- 基礎演算法：Sorting、Searching、Elementary Mathematical Algorithms、String Processing、Geometric Algorithms、Graph Algorithms、Dynamic Programming
- NP-Complete 觀念介紹
- 平行演算法簡介

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.)

所選用之程式語言軟體。一人一機之電腦教室。

課程要求和教學方式之建議  
Course Requirements and Suggested Teaching Methods

每一單元均應配合作業與程式習作。

其他  
Miscellaneous