國立東華大學

課　綱　Course Outline
資訊工程學系資工組

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	CSIE20000	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	計算機概論				

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 Inspire innovative thinking, increase analytical problem solving ability
3	培養團隊精神，學習溝通合作 Promote teamw ork spirit, encourage coordination and cooperation
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 perspective

	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 Ability of lifetime learning in information profession	●
B	實驗驗證資訊科學能力 Ability of validate experimental result validation in information science field	●
C	資訊工具整合運用能力 Ability of integrated applications of information technology	●

D	資訊系統應用設計開發能力 Ability of information application system design and development	●
E	團隊合作溝通協調能力 Ability of teamwork, communication, and coordination	○
F	資通訊科技問題解決能力 Ability of problem solving regarding information and communication technolog	○
G	瞭解資訊科技多元影響能力 Ability to understand information technology's multiple influences	○
H	肩負資訊人社會責任能力 Ability of bearing the social responsibilities being among information professionals	

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