



課 綱 Course Outline  
資訊工程學系資工組

中文課程名稱 Course Name in Chinese	計算機結構				
英文課程名稱 Course Name in English	Computer Architecture				
科目代碼 Course Code	CSIE30300	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	無				
課程目標 Course Objectives					
讓學生了解一個現代的 CPU 其內部架構為何，如何使速度更快、記憶體層次的觀念、輸出/入的影響，以及基本的平行架構。					
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 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

1. Computer Abstractions and Technology
2. The Role of Performance
3. Instructions: Language of the Machine
4. Arithmetic for Computers
5. The Process: Datapath and Control
6. Enhancing Memory with Pipelining
7. Exploiting Memory Hierarchy
8. Interfacing Processors and Peripherals

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.)

現有師資設備可支援。

#### 課程要求和教學方式之建議

#### Course Requirements and Suggested Teaching Methods

期中考、期末考與平常作業，平常作業包括寫數個組合語言程式。

#### 其他

#### Miscellaneous