



教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	計算機組織與組合語言		學年/學期 Academic Year/Semester	114/2	
課程名稱(英文) Course Name in English	Computer Organization				
科目代碼 Course Code	CSIEB0140	系級 Department & Year	學二	開課單位 Course-Offering Department	資訊工程學系
修別 Type	學程 Program	學分數/時間 Credit(s)/Hour(s)	3.0/3.0		
授課教師 Instructor	/紀新洲				
先修課程 Prerequisite					
課程描述 Course Description					
The course aims to introducing computer organization and architecture. From the course, the students will understand the design and operation of the basic computer modules and how to integrate them into a complete computer system. We will also evaluate and compare various architectures through quantitative approaches.					
課程目標 Course Objectives					
介紹計算機的基本組織與架構，使學生對於計算機系統的組成方式有一深入的瞭解，並學習如何用組合語言撰寫程式。 This course presents the basic organization and architecture of computer systems. It aims at making the students understand how a computer is composed and learn how to program with assembly language.					
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 technology			○	
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					
授課進度表 Teaching Schedule & Content					
週次 Week	內容 Subject/Topics			備註 Remarks	
1	Introduction				

2	Computer Abstractions and Technology	
3	MIPS Instruction Set and Assembly Language	
4	MIPS Instruction Set and Assembly Language	
5	MIPS Instruction Set and Assembly Language	
6	Review on Digital Logic Design	
7	Holiday (no class)	
8	Computer Arithmetic	
9	Midterm Exam	
10	Computer Arithmetic	
11	Single-cycle Machines	
12	Multi-cycle Machines	
13	Control Unit Design	
14	Pipelined Processors	
15	Pipelined Processors	
16	Memory Hierarchy	
17	Final Exam	
18		

教學策略 Teaching Strategies

- 課堂講授 Lecture
 分組討論 Group Discussion
 參觀實習 Field Trip
- 其他 Miscellaneous:

教學創新自評 Teaching Self-Evaluation

創新教學 (Innovative Teaching)

- 問題導向學習 (PBL)
 團體合作學習 (TBL)
 解決導向學習 (SBL)
- 翻轉教室 Flipped Classroom
 磨課師 Moocs

社會責任 (Social Responsibility)

- 在地實踐 Community Practice
 產學合作 Industry-Academia Cooperation

跨域合作 (Transdisciplinary Projects)

- 跨界教學 Transdisciplinary Teaching
 跨院系教學 Inter-collegiate Teaching

- 業師合授 Courses Co-taught with Industry Practitioners

其它 other:

學期成績計算及多元評量方式 Grading & Assessments

配分項目 Items	配分比例 Percentage	多元評量方式 Assessments							
		測驗 會考	實作 觀察	口頭 發表	專題 研究	創作 展演	卷宗 評量	證照 檢定	其他
平時成績(含出缺席) General Performance (Attendance Record)	20%	✓							Quiz
期中考成績 Midterm Exam	30%	✓							
期末考成績 Final Exam	30%	✓							
作業成績 Homework and/or Assignments	15%		✓						
其他 Miscellaneous (Class participation)	5%								Attendance

評量方式補充說明

Grading & Assessments Supplemental instructions

教科書與參考書目 (書名、作者、書局、代理商、說明)

Textbook & Other References (Title, Author, Publisher, Agents, Remarks, etc.)

David A. Patterson and John L. Hennessy, "Computer Organization and Design - The Hardware/Software Interface," Morgan-Kaufmann. (MIPS edition)

Chinese version: 鍾崇斌、楊惠親譯, "計算機組織與設計" 東華書局。

課程教材網址(含線上教學資訊, 教師個人網址請列位於本校內之網址)

Teaching Aids & Teacher's Website(Including online teaching information.
Personal website can be listed here.)

NDHU e-Learning

其他補充說明 (Supplemental instructions)