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②图玄束華大學

教學計劃表 Syllabus

次子可 型化 Oyllabao							
課程名稱(中文) Course Name in Chinese	計算機結構				學年/學期 Academic Year/Semester		114/1
課程名稱(英文) Course Name in English	Computer Architecture						
科目代碼 Course Code	CSIEB0160	系級 Department 學三 (& Year		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							

This course presents the design of computer systems. The focus is on the key building modules, including processor, memory, and I/O, and how they are connected and integrated. Methodologies are discussed to evaluate and improve the performance of the system. Modern design techniques are also introduced.

課程目標 Course Objectives

介紹現代計算機的結構,包括處理器的設計、使執行速度更快的技術、記憶體層次的觀念、輸出/入的組織,以及基本的平行架構。

This course presents the modern design of computer architecture. It covers the important design issues on processor design, techniques for performance improvement, memory hierarchy, I/O organization, and parallel processing.

01 801	induction, and parallel processing.	
	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	•
В	實驗驗證資訊科學能力Ability of validate experimental result validation in information science field	0
С	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	0
Е	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	0
G	瞭解資訊科技多元影響能力Ability to understand information technology's multiple influences	0
Н	扇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	Review on Instruction Set Architecture	
3	Review on Single-Cycle Processors and Multi-cycle Processors	
4	Pipelining	
5	Pipelining	
6	Memory Hierarchy	
7	Cache Design	
8	Midterm Exam	
9	Cache Design	
10	Virtual Memory	
11	Bus	
12	I/O and Interfacing	
13	I/O and Interfacing	
14	Superscalar Processors	
15	Final exam	
16	No class for National Holiday	
17	No class for National Holiday	
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Mi	scellaneous:	
	教學創新自評Teaching Self-Evaluation	
創新教學(Innovative Teaching)	
問題導	向學習(PBL) 解決導向學	型習(SBL)
翻轉教	室 Flipped Classroom	
社會責任(Social Responsibility)	
在地實.	踐Community Practice產學合作 Industy-Academia Cooperati	on
跨域合作(Transdisciplinary Projects)	
	學Transdisciplinary Teaching	
業師合	授 Courses Co-taught with Industry Practitioners	
其它 othe	r:	

學期成績計算及多元評量方式 Grading & Assessments										
配分項目	配分比例 Percentage	多元評量方式 Assessments								
Items		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)	25%	>							Quiz	
期中考成績 Midterm Exam	35%	>								
期末考成績 Final Exam	35%	>								
作業成績 Homework and/or Assignments										
其他 Miscellaneous (Class participation)	5%								Class 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.)

Textbook: David Patterson and John Hennessy, Computer Organization & Design: The Hardware/Software Interface, Morgan Kaufmann.

Reference: John Hennessy and David Patterson, Computer Architecture: A Quantitative Approach, Morgan Kaufmann.

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)