

 國立東華大學
教學計劃表 Syllabus

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 & Year	學三	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.					
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	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 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)	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)									