



教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	嵌入式系統設計概論		學年/學期 Academic Year/Semester	112/2	
課程名稱(英文) Course Name in English	Introduction to Embedded System Design				
科目代碼 Course Code	CSIEB0380	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 introduces the basic concepts of embedded systems design as well as the implementation issues. A platform will be employed to demonstrate how an embedded system is developed and realized. A few labs will be done to obtain the hands-on experience.					
課程目標 Course Objectives					
嵌入式系統在現代已經是無所不在。這門課主要介紹嵌入式系統設計的基本概念與設計流程，使學生對於嵌入式系統如何構築有一深入的瞭解，並且透過一些實驗來獲得實作上的經驗。 Embedded systems are ubiquitous with diversified applications nowadays. This course presents the basic concepts and design process of embedded systems. It aims at making the students understand how an embedded system is built, and obtain hands-on experience through labs.					
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	Design and Implementation of Embedded Systems				

3	ARM Instruction Set & Programming	
4	ARM Instruction Set & Programming	
5	Platform and I/O Interfacing	
6	LED Control	
7	Holiday (no class)	
8	Dot Matrix Control	
9	Midterm Exam	
10	Keyboard Scanning	
11	LCD Display	
12	Timer	
13	Term Project Proposal	
14	Embedded Operating Systems	
15	Real-time Operating Systems	
16	Final Exam	
17	Term Project Presentation & Demo	
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 General Performance	40%		✓						Labs
期中考成績 Midterm Exam	15%	✓							
期末考成績 Final Exam	15%	✓							
作業成績 Homework and/or Assignments	25%		✓	✓					Term Project
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.)									
Lecture slides									
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.)									
其他補充說明 (Supplemental instructions)									