



課 綱 Course Outline  
資訊工程學系國際組

中文課程名稱 Course Name in Chinese	嵌入式系統設計概論				
英文課程名稱 Course Name in English	Introduction to Embedded System Design				
科目代碼 Course Code	CSIEB0380	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					
課程目標 Course Objectives					
Embedded systems are in almost every electronic device in use today. The skills for embedded software development cover a variety of topics. We will investigate these topics in this course.					
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 cooperatio				
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 perspectives				
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 Profound professional knowledge and skills			●	
B	實驗驗證資訊科學能力 Sound and free spirit; simple and generous quality			●	
C	資訊工具整合運用能力 Ability to appreciate beauty and think creatively			●	

D	資訊系統應用設計開發能力 Sense of democracy, the rule of law, and civil responsibility	○
E	團隊合作溝通協調能力 Ability of communication, teamwork, and social practice	●
F	資通訊科技問題解決能力 Possess both domestic and global perspectives	●
G	瞭解資訊科技多元影響能力 Knowledgeable and possess the quality of humanism	●
H	肩負資訊人社會責任能力 Ability of verbal expression and information organization and application	○

圖示說明 Illustration : ● 高度相關 Highly correlated ○ 中度相關 Moderately correlated

### 課程大綱 Course Outline

1. What is an embedded system?
2. Developing a simple embedded program
3. Issues in compiling, linking, and locating
4. Programs in ROM
5. Introduction to embedded hardware
6. Memory in embedded systems
7. Peripherals for embedded systems
8. Embedded operating systems
9. Integration of parts in an embedded system
10. Optimizing embedded program

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.)

1. 可由資工系具相關專長教師擔任授課工作
2. 實習部分可以使用資工系電腦教室

### 課程要求和教學方式之建議

#### Course Requirements and Suggested Teaching Methods

指定教材按預定進度進行教學。教學以講授及討論為主，視需要佐以相關文獻資料。參考教材如 (不以此為限) :

\*Computers as Components: Principles of Embedded Computing System Design, by Wayne Wolf,

Morgan Kaufman Publishers, 2002.

\*Embedded Software Development with eCos, by A. J. Massa, Prentice Hall Press, 2003.

\*Designing Embedded Communications Software, by T. Sridhar, CMP Books Press, 2003.

其他

Miscellaneous