朝陽科技大學 097學年度第2學期教學大綱
Embedded System Programming 嵌入式系統程式設計

當期課號	2676	Course Number	2676
授課教師	洪若偉	Instructor	HUNG,RUO WEI
中文課名	嵌入式系統程式設計	Course Name	Embedded System Programming
開課單位	資訊工程系(四日)三A	Department	
修習別	選修	Required/Elective	Elective
學分數	3	Credits	3
課程目標	本課程目標如下： 一、讓學生瞭解embedded linux上的程式設計。 二、藉由搭配實習課程，讓學生可以擁有開發embedded system上程式的能力。 三、以實例，讓學生可以學習到embedded linux上程式設計的開發技巧。	Objectives	The aim of the course includes the following: 1. let students understand the programming in embedded linux. 2. By the practical training in course, let students hold the capacity of developing the program in embedded system. 3. By some practical examples, let students study the kill of designing program in embedded linux.
教材	(1) Embedded Linux在ARM9 S3C2410(PreSOCes)上實作, 新華電腦股份有限公司, 全華圖書, 2008. (2) 老師自編投影片.	Teaching Materials	(1) Embedded Linux在ARM9 S3C2410(PreSOCes)上實作, 新華電腦股份有限公司, 全華圖書, 2008. (2) 老師自編投影片.
成績評量方式	1. 隨堂實作(Course Implementation and Exam,HW): 20% 2. 期中考#1(Midterm Exam): 30% 3. 期中考#2(Midterm Exam): 30% 4. 期末報告(Final Report): 30%	Grading	1. Course Implementation and Homeworks: 20% 2. Midterm exam #1: 30% 3. Midterm exam #2: 30% 4. Final Report: 30%
教師網頁	http://www.cyut.edu.tw/~rwhung		
教學內容	本課程目標如下：一、讓學生瞭解embedded linux上的程式設計。二、藉由搭配實習課程，讓學生可以擁有開發embedded system上程式的能力。三、以實例，讓學生可以學習到embedded linux上程式設計的開發技巧。 本課程的教學內容如下: 1.嵌入式系統概論 2.SoC嵌入式系統開發流程及實驗平台架設 3.虛擬機器簡介及Virtual PC安裝與使用 4.(Embedded) Linux作業系統簡介 5.(Embedded) Linux常用指令集 6.Embedded Linux的軟體開發環境-GCC、Makefile、Arm-elf-toolchain 7.Embedded Linux的軟體偵錯工具-GDB、Domingo 8.Embedded Linux的系統建置實習-Kernel編譯及燒錄測試 9.Embedded Linux的驅動程式設計原理及實習 10.Embedded Linux的應用程式實習-LCD、LED、DIP-Switch、7-Seg、Key-Pad 11.Embedded Linux的應用程式實習-Codec 12.Embedded Linux的應用程式實習-CCM 13.Embedded Linux的應用程式實習-MP3 14.Embedded Linux的應用程式實習-網路通訊	Syllabus	The aim of the course includes the following: 1. let students understand the programming in embedded linux. 2. By the practical training in course, let students hold the capacity of developing the program in embedded system. 3. By some practical examples, let students study the kill of designing program in embedded linux. The course introduces the following: 1.Introduction to embedded system 2.The development flow of SoC embedded system and the installation of experiment platform 3.Introduce to virtual machine and the installation and use of package virtual PC 4.Introduce to (Embedded) Linux operation system 5.Introduce the useful instructions of (Embedded) Linux 6.The software development environment of embedded linux- GCC, Makefile, Arm-elf-toolchain 7.The software debugger of embedded linux- GDB, Domingo 8.The installation of embedded linux- complie linux kernel and burn it into NAND flash or RAM 9.The design of drivers in embedded linux 10.The application in embedded linux- LCD, LED, DIP-Switch, 7-Seg, Key-Pad 11.The application in embedded linux- Codec 12.The application in embedded

			linux- CCM 13.The application in embedded linux- MP3 14.The application in embedded linux- Network communication

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