朝陽科技大學 099學年度第1學期教學大綱
Digital Systems 數位系統

當期課號	2495	Course Number	2495
授課教師	張原豪	Instructor	CHANG,YUEN HAW
中文課名	數位系統	Course Name	Digital Systems
開課單位	資訊工程系(四日)一A	Department	
修習別	必修	Required/Elective	Required
學分數	3	Credits	3
課程目標	這個課程介紹數位系統設計與實務，內容包含邏輯電路的基本觀念、電子電路實作邏輯電路、邏輯函數的最佳化、以較大型組合電路來設計邏輯函數、儲存元件、同步與非同步序向電路。在基本觀念上，說明布林代數與邏輯閘；在電子電路實作與邏輯函數最佳化的課程中，我們使用CAD工具來設計與合成電路；接著介紹利用解碼器、編碼器、與多工器來設計邏輯函數；序向電路是另一個重點，包括：位移記錄器、計數器、有限狀態機、以及CAD工具。	Objectives	This course is an introduction to the design and implementation of digital systems. We will study various topics including basic aspects and electronic aspects of logic circuits, optimized implementation of logic functions, combinational circuits used as building blocks, storage elements, synchronous and asynchronous sequential circuits. In the basic aspects of logic circuits, we will study Boolean algebra, logic gates; in the electronic aspects and optimized implementation of logic functions, we study how to synthesize combinational circuits using logic gates and CAD tools. Using decoder, encoders, and multiplexers as building blocks in larger design is presented. Following the studies of combinational circuits, sequential circuits are introduced. We study the storage element (flip-flops), realization of shift registers and counters; explain the behavior of synchronous (asynchronous) sequential circuits (finite state machines) and develop practical design technique for both manual and automated design.
教材	1. 黑板講授上課(Textbook author:Roth) 2. 配合實作實驗 3. 期中末考試	Teaching Materials	1. speak teaching 2. Digital circuit experiments 3. Midterm/final exam
成績評量方式	1. 期中/末考:佔30%/30% 2. 隨堂小考及作業:30% 3. 平時成績:10% (出席)	Grading	1. Midterm exam:30%, Final exam:30% 2. Quiz and homework:30% 2. Learning attitute:10%
教師網頁	http://www.csie.cyut.edu.tw/~cyhfyc/cyhfyc.html		
教學內容	1. 使同學熟悉與了解數位系統基本設計原理. 2. 課程中安排了實作的實驗,以期培養同學實際動手的能力. 3. 課程中安排了期末觀摩教學,讓同學相互的觀摩他組的作品,並排定時間上台報告其製作成果.	Syllabus	1. Study for basic design principles of digital systems 2. Operate about experiments of digital circuits 3. Group oral report to show the contribution of final project