朝陽科技大學 096學年度第1學期教學大綱
Computer-Aided Design 電腦輔助電路設計

當期課號	2421	Course Number	2421
授課教師	張原豪	Instructor	CHANG,YUEN HAW
中文課名	電腦輔助電路設計	Course Name	Computer-Aided Design
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	1.本課程在介紹使用電腦輔助工具來設計類比積體電路.本課程起於CMOS製程技術的了解,並介紹如何在Cadence環境下設計/模擬積體電路. 2.常見的CMOS電路方塊介紹:電流鏡,反向放大器,差動對,疊接放大器,單級/雙級式運算放大器,能階帶參考電路,振盪器,壓控振盪器,相鎖迴路. 3.內容:全客戶訂製晶片設計,CMOS製程及佈局,Cadence環境使用介紹,Composer電路編輯器使用,Hspice電路模擬器使用,Pre-Sim佈局前模擬設計,Virtuoso佈局編輯器使用, DRC佈局法則檢驗,Post-Sim佈局後模擬設計,專題實作研究.	Objectives	1. This course presents the CAD tool design of analog integrated circuits. The course begins with CMOS technology and principles, and introduces how to design/simulate IC circuit via Cadence tool. 2. Some CMOS blocks are introduced, including current mirrors, inverting amplifiers, differential pairs, cascode amplifiers, one-stage and two-stage OP amp, bandgap reference, oscillator, VCO, and PLL. 3.Contant: Introduction to Full-Custom Design, CMOS Fabrication & Layout, Cadence Environment, Composer Editor, Hspice Simulator, Pre-Layout Simulation, Virtuoso Editor, Design Rule Check, Post-Layout Simulation, Case Study.
教材	1. Design and analog CMOS integrated circuits, Behzad Razavi (McGraw-Hill International). 2. VLSI設計概論/實習,唐經洲,王立洋(高立圖書)	Teaching Materials	1. Design and analog CMOS integrated circuits, Behzad Razavi (McGraw-Hill International). 2. VLSI設計概論/實習,唐經洲,王立洋(高立圖書)
成績評量方式	1. 期中末各20% 2. 期末報告20% 3. 作業:20% 4. 出席20%	Grading	1. Midterm: 20%, Final exam.: 20% 2. Final Report: 20% 3. Homework: 20% 4. Learning attitute: 20%
教師網頁	_		
教學內容	1. 本科目爲IC設計基礎課程 2. Cadence CAD tools環境基本設定與操作 3. 類比IC電路設計之理論基礎 4. 實際下單訂製IC理論流程	Syllabus	1. Fundamentals of IC design 2. Operation of Cadence environmenet 3. Analog IC design theory 4. IC implemntation

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