

朝陽科技大學 094學年度第1學期教學大綱
VLSI Physical Design 積體電路實體設計

當期課號	7381	Course Number	7381
授課教師	蔡加春	Instructor	TSAI, CHIA CHUN
中文課名	積體電路實體設計	Course Name	VLSI Physical Design
開課單位	資訊工程系碩士班一A	Department	
修習別	選修	Required/Elective	Elective
學分數	3	Credits	3
課程目標	<p>本課程之目的在讓學生了解VLS技術之理論,熟悉數位超大型積體電路、各功能模組、基本線路之模式,進而深入研究低功耗、快速元件之設計技術。此外,亦讓學生習得快速完成設計之方法。在課程中並安排實務設計,讓學生運用與國內大多數產業界相同之電腦輔助軟體,進行電路設計與佈局,以培養學生實作經驗。</p>	Objectives	<p>The purpose of this course is to teach students the principles and practices of VLSI design, and allow them to be familiar with the typical structures and design styles of the basic circuits, building blocks and major application systems. Sufficient material is covered to enable the student pursuing advanced studies in low power and high speed design techniques. Besides, the student will also learn skills which will shorten the design phase. Appropriately design projects which use real-world CAD environment are provided to help the student in implementing , exercising and mastering the subject matter immediately after exposition.</p>
教材	<p>1. Naveed Sherwani, Algorithms for VLSI Physical Design Automation, 3rd Ed., 1999, Kluwer Academic Publishers. (科大代理進口, 02-2701-7353)</p> <p>2. Reading Materials of Journal and Conference papers recently.</p>	Teaching Materials	
成績評量方式	Homework 30%, Term Test 40%, Term Project 30%.	Grading	Homework 30%, Term Test 40%, Term Project 30%.
教師網頁	-		
教學內容	<p>9/14 Course Introduction and Evaluation Grading 9/21 Unit_01 Introduction to VLSI Physical Design Automation --- Unit_02 Fabrication Devices 9/28 Unit_03 Data Structure & Algorithm 10/05 Unit_04 Partition 10/12 Unit_05 Floorplanning 10/19 Unit_06 Placement 10/26 Unit_07 Global Routing 11/02 Unit_08 Detailed Routing 11/09 Unit_09 OTC Routing & Via minimization 11/16 Unit_10 Clock Routing & Power Routing 11/23 Unit_11 Compaction 11/30 Term Test 12/07 Review of Term test & Demo of Term project examples 12/14 Unit_12&Unit_13 Physical Design of FPGAs and MCMs 12/21 Paper & Project Presentation (I) 12/28 Paper & Project Presentation (II) 1/04 Paper & Project Presentation (III) 1/11 Term project report</p>	Syllabus	<p>9/14 Course Introduction and Evaluation Grading 9/21 Unit_01 Introduction to VLSI Physical Design Automation --- Unit_02 Fabrication Devices 9/28 Unit_03 Data Structure & Algorithm 10/05 Unit_04 Partition 10/12 Unit_05 Floorplanning 10/19 Unit_06 Placement 10/26 Unit_07 Global Routing 11/02 Unit_08 Detailed Routing 11/09 Unit_09 OTC Routing & Via minimization 11/16 Unit_10 Clock Routing & Power Routing 11/23 Unit_11 Compaction 11/30 Term Test 12/07 Review of Term test & Demo of Term project examples 12/14 Unit_12&Unit_13 Physical Design of FPGAs and MCMs 12/21 Paper & Project Presentation (I) 12/28 Paper & Project Presentation (II) 1/04 Paper & Project Presentation (III) 1/11 Term project report</p>