



教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	積體電路佈局設計實驗AA			學年/學期 Academic Year/Semester	115/1
課程名稱(英文) Course Name in English	IC Layout Design Laboratory				
科目代碼 Course Code	EE__3373AA	系級 Department & Year	學三	開課單位 Course-Offering Department	電機工程學系
修別 Type	學程 Program	學分數/時間 Credit(s)/Hour(s)		1.0/	
授課教師 Instructor	/劉子齊				
先修課程 Prerequisite	/＃電子學(一)/＃電子學(二)/＃數位邏輯設計				

課程描述 Course Description

本課程為大學部實驗課程，經由本課程可熟悉積體電路製作之各種電腦輔助軟體，完成由電路模擬開始至佈局下線之晶片製作過程。
具備「電路學」與「數位邏輯」與「電子學」基礎。
具備應用電腦繪圖軟體繪製電子電路圖之能力。
具備應用電路模擬軟體模擬電子電路之能力。

課程目標 Course Objectives

1. 具備使用晶片設計模擬軟體之能力。
2. 具備類比電路佈局設計與模擬之能力。
3. 了解類比晶片下線實作之流程。

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	培育具備工程、應用數學與物理科學等數理知識之基本能力。To cultivate the basic knowledge of engineering, applied mathematics and physics.	●
B	培育系統分析、模擬驗證、實作實現之能力。To cultivate the basic ability of analysis, verification and implementation of systems.	●
C	訓練軟體工具使用與硬體實務驗證相互輔助之能力。To train the auxiliary ability between the utilization of software tool and the verification of the hardware practice.	●
D	訓練電機本知學能技術與工程實務相互結合運用之能力。To train the integrate ability between professional instinct in learning technique and engineering practice.	●
E	落實專題製作之群體合作與團隊競爭之能力。To fulfill the ability of group cooperation and teamwork competition.	●
F	落實發掘問題、邏輯分析、克服瓶頸與持續學習之能力To fulfill the ability of question finding, logical analyzing, bottleneck overcoming and continuous learning.	●
G	了解學術倫理與智慧財產觀念，掌握產業更迭需求與具備多元專長之能力。To obtain the ability of multi-specialization and to meet the industry demand as well as to have the ability of academic ethics and concept of intellectual property	○
H	了解國內外市場變化，具備基本科技英文閱讀溝通之能力。To understand the change of global market and the have the basic ability of reading and conversation in English.	○

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

授課進度表 Teaching Schedule & Content

週次Week	內容 Subject/Topics	備註Remarks
1	Introduction	

2	HSPICE	
3	CadenceComposer	
4	CadenceVirtuoso	
5	CalibreDRC	
6	CalibreLVS	
7	CalibrePEX	
8	SPICE Model	
9	期中考試週 Midterm Exam	
10	Experiment(1)	
11	Experiment(2)	
12	Experiment(3)	
13	Experiment(4)	
14	Experiment(5)	
15	Final Project(1)	
16	Final Project(2)	
17	期末考試週 Final Exam	

彈性 教學 規劃 Flexible Teaching Plan	請勾選(至少需勾選1 個項目): Please tick the box(es). (At least one item is required.): ☐ 問題討論 Problem-based Discussion ☐ 翻轉教學 Flipped Classroom ☐ 展演實作 Performance / Practical Presentation ☐ 校外參訪 Off-campus Visit ☐ 講座活動 Lecture / Seminar ☐ 線上作業 Online Assignments ☒ 自主學習 Self-directed Learning ☐ 課業輔導 Academic Support ☒ 實驗操作 Experiment Operation ☐ 遠距教學(同步) Distance Learning (Synchronous) ☐ 遠距教學(非同步) Distance Learning (Asynchronous) ☐ 其他(請填寫) Others (Please specify.): 備註: 本校學期週數自115 學年度起調整為17 週, 為符合1學分18 小時之原則, 請教師規劃安排彈性教學。 Note: From the 115th academic year, the semester will be 17 weeks. Please include flexible teaching activities to meet the required 18 hours per credit.
--	---

教學策略 Teaching Strategies

- ☒ 課堂講授 Lecture ☐ 分組討論 Group Discussion ☐ 參觀實習 Field Trip
☐ 其他 Miscellaneous:

教學創新自評 Teaching Self-Evaluation

創新教學 (Innovative Teaching)

- ☒ 問題導向學習 (PBL) ☐ 團體合作學習 (TBL) ☐ 解決導向學習 (SBL)
☐ 翻轉教室 Flipped Classroom ☐ 磨課師 Moocs

社會責任 (Social Responsibility)

- ☐ 在地實踐 Community Practice ☒ 產學合作 Industry-Academia Cooperation

跨域合作 (Transdisciplinary Projects)

- ☐ 跨界教學 Transdisciplinary Teaching ☐ 跨院系教學 Inter-collegiate Teaching
☐ 業師合授 Courses Co-taught with Industry Practitioners

其它 other:

學期成績計算及多元評量方式 Grading & Assessments									
配分項目 Items	配分比例 Percentage	多元評量方式 Assessments							
		測驗 會考	實作 觀察	口頭 發表	專題 研究	創作 展演	卷宗 評量	證照 檢定	其他
平時成績(含出缺席) General Performance (Attendance Record)									
期中考成績 Midterm Exam									
期末考成績 Final Exam									
作業成績 Homework and/or Assignments	40%								
其他 Miscellaneous (期末專題)	60%								
評量方式補充說明 Grading & Assessments Supplemental instructions									
教科書與參考書目(書名、作者、書局、代理商、說明) Textbook & Other References (Title, Author, Publisher, Agents, Remarks, etc.)									
自編實驗課程教材									
課程教材網址(含線上教學資訊,教師個人網址請列位於本校內之網址) Teaching Aids & Teacher's Website(Including online teaching information. Personal website can be listed here.)									
投影片與補充講義下載位址: 東華e學苑									
其他補充說明 (Supplemental instructions)									