國立台灣科技大學 114學年 第2學期 課程大綱

Spring 2026 NTUST Course Outline

授課教師：鍾勇輝

Instructor:Yung-Hui Chung

課程名稱：類比積體電路設計與應用

Course Title：Analog Integrated Circuit Design and Applications

2026/11/3

課程代號：ET4612701 Course Code 學分數：3 Credits	必選修：選修/半學年 Required/Electve:Elective/Half Yr. 先修課程： Prerequisites
節次教室：R6(IB-307) R7(IB-307) W6(EE-503) Time/Location	
專業核心能力： Core Professional Competencies	使用電腦與網際網路能力 設計電子電路能力 系統及元組件之模擬與分析能力 訊號分析處理與應用之能力 具專業閱讀與手冊查閱能力
課程網址： Course Website	
課程宗旨： Course Objectives	培養學生對類比積體電路設計的實務能力與相關應用，熟悉電路設計工具軟體與晶片實現的相關技能。
課程大綱： Outline of Lectures	

W1: Noise Analysis (part-1)
W2: Noise Analysis (part-2)
W3: Opamp (part-1)
W4: Opamp (part-2)
W5: Bandgap Reference Circuits (part-1)
W6: Bandgap Reference Circuits (part-2)
W7: Bandgap Reference Circuits (part-3)
W8: Mid Exam
W9: Advanced Opamp (part-1)
W10: Advanced Opamp (part-2)
W11: Advanced Opamp (part-3)
W12: Switched-Capacitors (part-1)
W13: Switched-Capacitors (part-2)
W14: Nonlinearity and Mismatch (part-1)
W15: Nonlinearity and Mismatch (part-2)
W16: Final Project Presentation
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W15: Nonlinearity and Mismatch (part-2)
W16: Final Project Presentation

授課方式： Method of Instruction	講授 Lecture：70% 分組討論 Group discussion：0% 案例研討 Case study：0% 操做練習 Practical exercises：30% 講授 Lecture：%
教科書： Textbooks	B. Razavi, Design of Analog CMOS Integrated Circuits, McGraw-Hill, 2nd ED
參考書目： References	Allen and Holberg, CMOS Analog Circuit Design, Oxford, 3rd ED Tony Chan Carusone, David A. Johns and Kenneth W. Martin, ANALOG INTEGRATED CIRCUIT DESIGN, 2nd ED P. R. Gray and G. Me, Analysis and Design of Analog Integrated Circuits, Wiley, 5th ED
修課須知： Notice	有兩位助教與CAD Tool輔助教材
評量方式： Grading	Homeworks and Labs: 40% Midterm Exam: 30% Final Project: 30%
備註說明： Notes	類比積體電路設計概論 或 良好的電子學與電路學基礎