

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

2026/6/22

課程代號： ET4612701 Course Code 學分數： 3 Credits	必選修：選修/半學年 Required/Elective: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： 使用電腦與網際網路能力 Core Professional Competencies 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： 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。 Course Objectives	
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： 講授 Lecture：70%
 Method of Instruction 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： B. Razavi, Design of Analog CMOS Integrated Circuits, McGraw-Hill, 2nd
 Textbooks ED

參考書目： Allen and Holberg, CMOS Analog Circuit Design, Oxford, 3rd ED
 References 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： 有兩位助教與CAD Tool輔助教材
 Notice

評量方式： Homeworks and Labs: 40%
 Grading Midterm Exam: 30%
 Final Project: 30%

備註說明： 類比積體電路設計概論 或 良好的電子學與電路學基礎
 Notes