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：陳筱青

Instructor:Hsiao Chin Chen

課程名稱：互補金氧半導體射頻積體電路設計

Course Title：CMOS RF Integrated Circuit Design

2026/11/3

課程代號：EE5013701 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-601-1) R7(IB-601-1) R8(IB-601-1) Time/Location	
專業核心能力： Core Professional Competencies	
課程網址： Course Website	
課程宗旨： Course Objectives	Students will learn about the design and applications of RFICs. By lecturing, project assigning, and introducing some IEEE technical papers, the instructor will help students to build up professional skills in the field of CMOS RFICs.
課程大綱： Outline of Lectures	1. Introduction 2. Migrating analog/mixed-signal designs to FinFET 3. RFICs for Wireless Communications 4. Cryo-CMOS circuits and systems for quantum computing 5. Cryo-CMOS LNA Design and Inductor Modeling 6. Mixer 7. Oscillator 8. Frequency Synthesizer 9. Divider
授課方式： Method of Instruction	講授 Lecture：70% 分組討論 Group discussion：10% 案例研討 Case study：10% 操做練習 Practical exercises：10% 講授 Lecture：%
教科書： Textbooks	RF Microelectronics, Behzad Razavi, Prentice Hall,1998
參考書目： References	“The Design of CMOS Radio-Frequency Integrated Circuits ”, Thomas Lee, Cambridge.
修課須知： Notice	TA: 王啟超 (EE-506-2) 輔助教材: Moodle
評量方式： Grading	Midterm 30% Project 40% (1st:10%, 2nd:10%, final:20%) Final Exam 30%
備註說明： Notes	Students should be familiar with microelectronics and electromagnetism.