

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：王蒼容

Instructor: Wang, Chun-Long

課程名稱：高速電路板系統設計

Course Title : High-Speed PC Board System Design

2026/6/22

課程代號： ET5310701 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： R2(IB-512) R3(IB-512) R4(IB-512) Time/Location	
專業核心能力： Core Professional Competencies	
課程網址： Course Website	
課程宗旨： This course aims to equip the students with the fundamentals of high-speed PC board system design. Course Objectives	
課程大綱： Chapter 1 The Importance of Interconnect Design Outline of Chapter 2 Ideal Transmission Line Fundamentals Lectures Chapter 3 Crosstalk Chapter 4 Coupled Microstrip Line Chapter 5 Nonideal Interconnect Issues Chapter 6 Differential Serpentine Delay Line Chapter 7 Right-Angled Differential Transmission Line Chapter 8 Bended Differential Transmission Line Using Compensation Inductance and Capacitance Chapter 9 Common-Mode Noise Suppression of Bended Coplanar Transmission Lines Chapter 10 Connectors, Packages, and Vias Chapter 11 Millimeter-Wave Flip-Chip Transitions	
授課方式： 講授 Lecture：100% Method of Instruction 分組討論 Group discussion：0% 案例研討 Case study：0% 操做練習 Practical exercises：0% 講授 Lecture：%	
教科書： High Speed Digital System Design: A Handbook of Interconnect Theory and Design Practices, Stephen H. Hall, Garrett W. Hall, James A. McCall, New York, Wiley, 2000. Textbooks	
參考書目： References	

Advanced Signal Integrity for High-Speed Digital Designs, Stephen H. Hall, and Howard L. Heck, John Wiley & Sons, 2009.
High-Speed Signal Propagation (Advanced Black Magic), Howard Johnson, Marin Graham, Prentice Hall PTR.
Handbook of Digital Techniques for High-Speed Design: Design Examples, Signaling and Memory Technologies, Fiber Optics, Modeling, Granberg Tom, Prentice Hall, 2004.
Principles of Electronic Packaging, Donald P. Seraphim, Ronald C. Lasky, and Che-Yu Li, New York, McGraw

修課須知：
Notice

評量方式： Midterm (40%)
Grading Final Examination (40%)
Special Report (20%)

備註說明： None
Notes