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：張建國

Instructor:CHIEN-KUO CHANG

課程名稱：電路學(二)

Course Title：Circuit Theory (2)

2026/11/3

課程代號： EE2202303 Course Code 學分數： 3 Credits	必選修：必修/半學年 Required/Electve:Required/Half Yr. 先修課程： Prerequisites
節次教室： T2(IB-307) W6(IB-307) W7(IB-307) Time/Location	
專業核心能力： Core Professional Competencies	
課程網址： Course Website	
課程宗旨： Course Objectives	由正弦交流穩態分析及功率計算之說明，進而介紹平衡三相電路、並運用拉氏轉換於電路分析；經由頻率選擇電路之概述，推演各式主動濾波器電路，並以傅立葉級數展開交流電路之頻率響應，終而進行雙端點電路之互聯與分析。 The explanation of steady-state analysis and power calculation of sinusoidal AC is followed by an introduction to balanced three-phase circuits, utilizing Laplace transforms for circuit analysis. Through an overview of frequency-selective circuits, various active filter circuits are derived, and the frequency response of AC circuits is expanded using Fourier series. Finally, the interconnection and analysis of two-terminal circuits are conducted.
課程大綱： Outline of Lectures	1 正弦穩態分析 Sinusoidal Steady-State Analysis (Chap. 9) 2 拉氏轉換運用於電路分析 The Laplace Transform in Circuit Analysis (Chap. 13) 3 頻率選擇電路概述 Introduction to Frequency Selective Circuits(Chap. 14) 4 主動濾波器電路 Active Filter Circuits(Chap. 15) 5 正弦穩態功率計算 Sinusoidal Steady-State Power Calculations(Chap. 10) 6 平衡三相電路 Balanced Three-Phase Circuits(Chap. 11) 7 雙端點電路 Two-Port Circuits(Chap. 18) 8 傅立葉級數 Fourier Series(Chap. 16)
授課方式： Method of Instruction	講授 Lecture：90% 分組討論 Group discussion：0% 案例研討 Case study：10% 操做練習 Practical exercises：0% 講授 Lecture：%
教科書： Textbooks	J.W. Nilsson & S.A. Riedel, Electric Circuits, 11th Edition, Pearson, 2020.（滄海圖書）
參考書目： References	
修課須知： Notice	

評量方式： Grading	小考、作業及期中考試(60%)、期末考試(30%)、課堂表現(10%)；可能視情況微幅調整比例或項目。 Quizzes, assignments and midterm exams (60%), final exam (30%), classroom performance (10%); the proportions or items may be slightly adjusted depending on the situation. 課堂差勤表現將影響成績評定，學生應準時到課及親自簽到，並謹守課堂秩序，切勿任意飲食、談話等。Attendance and performance in class will affect grade evaluation. Students should arrive on time for class and sign in personally, and must adhere to classroom order, avoiding eating, talking, and other distractions.
備註說明： Notes	1.電路學為電機系之基礎課程，凡初通物理及微積分之有志學生均可修習。Circuit theory is a foundational course for the electrical engineering department, and any students who have a basic understanding of physics and calculus are welcome to enroll. 2.為有效掌握進度，將利用投影片進行授課，學生宜預習課程資料。To effectively keep up with the pace of the course, lectures will be conducted using slides, and students are encouraged to review the course materials in advance.