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：陳亮光

Instructor:Liang-Kuang Chen

課程名稱：應用電子學

Course Title：Applied Electronics

2026/11/3

課程代號： GD3409301 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： F8(TR-413-2) R3(TR-413-2) R4(TR-413-2) Time/Location	
專業核心能力： 培養學生具備了解電子學、半導體等元件馬達控制原理之觀念與核心能力。 Core Professional Competencies	
課程網址： Course Website	
課程宗旨： Course Objectives	The objective of this course is to train students with fundamental knowledge of electrical engineering, including circuit theory and techniques, digital electronics and digital systems, and electronic devices. This is considered the entry-level course for non-electrical engineering background students to gain the basis of the electrical engineering fields. The contents start from the fundamental knowledge of physics and mathematics, and dive into the technical specialty of the relevant fields.
課程大綱： Outline of Lectures	1. Circuits: KCL, KVL, Mesh and Loop analyses, Thevenin, and Norton, source transformation, superposition (CH1-2) 2. Inductance and capacitance (CH3), and AC CKT analysis (CH5), MT1 (about 5 weeks) (we skip both the response chapters) 3. Digital electronics (Ch7-8, selected topics) (2-3 weeks) 4. Semiconductor and diode (CH9) (about 1-2 weeks) 5. Amplifiers (CH10) (1 weeks), MT2 6. Transistor: BJT, JFET, and MOSFET (CH11-12, and maybe contents from other books) (3-4 weeks) 7. Operational amplifier (Op-Amp) (CH13) (about 1-2 weeks)
授課方式： Method of Instruction	講授 Lecture：100% 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： Textbooks	Electrical Engineering: Principles & Applications, Global 7th Edition, by: Allan R. Hambley, published: 23rd April 2018, ISBN: 9781292223124, Number of Pages: 896.
參考書目： References	1. B. Razavi, Fundamentals of Microelectronics 2. R. J. Smith and R. C. Dorf, Circuits, Devices and Systems: A First Course In Electrical Engineering 3. Boylestad and Nashelsky, Electronic Devices and Circuit Theory 4. Electronic Principles, 7th ed., by Albert Malvino and David Bates 5. D. A. Neamen, Microelectronics: Circuit Analysis and Design

修課須知： Notice	
評量方式： Grading	10% attendance and exercises, 30% Midterm 1, 30% Midterm 2, 30% Final exam
備註說明： Notes	Physics, calculus, linear algebra