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：徐秀蘭,
黃欣萍

Instructor:HSU HSIU
LAN,HUANG,HSIN-PING

課程名稱：材料實驗(三)

Course Title：Materials Science and Engineering Laboratory (III)

2026/11/4

課程代號： TE3034301 Course Code 學分數： 1 Credits	必選修：必修/半學年 Required/Electve:Required/Half Yr. 先修課程： Prerequisites
節次教室： Time/Location	M10(E1-243) M8(E1-243) M9(E1-243)
專業核心能力： Core Professional Competencies	■ 規劃與執行實驗，並具解析數據之能力。 ■ 執行工程實務所需技術、技巧及使用現代化工具及儀器操作的能力。 ■ 設計機械系統、元件、製程或材料設計、製造與跨域整合分析之能力。 ■ 能發掘、分析、應用研究成果及因應複雜且整合性工程問題之能力。
課程網址： Course Website	non
課程宗旨： Course Objectives	To make students familiar with the theory and practice of various material processing processes, processing machinery and 3D printing practice processing technology system course, the practice content includes practical operation of various processing machinery and 3D printing practical application.
課程大綱： Outline of Lectures	Polymer materials processing Experimental Practice： 1. Rubber Mulling Mixer 2. Compression Molding 3. Injection Molding 4. Melt Flow Index 5. Melt Spinning and Film Molding 3D Printer Experimental Practice： 1. Introduction of 3D printing technology 2. FDM (Phrozen) 3. vp 4. Tinkercad 5. A. Test B. LED lamp holder (3D graphical design)
授課方式： Method of Instruction	講授 Lecture：20% 分組討論 Group discussion：10% 案例研討 Case study：10% 操做練習 Practical exercises：60% 講授 Lecture：%
教科書： Textbooks	Experimental Course Handouts (PPT)
參考書目： References	Experimental Course Handouts (PPT) & VCR Polymer processing principles and manufacturing
修課須知： Notice	Laboratory safety education training in the first week.

評量方式： Grading	Attend class on time and attitude :40% Experiment Report : 30% Midterm and Final examination :30%
備註說明： Notes	Laboratory safety education training in the first week.