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

Instructor:HSU HSIU LAN

課程名稱：材料實驗(二)

Course Title：Materials Science and Engineering Laboratory (II)

2026/11/3

課程代號：TX4104302 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：R1(E1-134) R2(E1-134) R3(E1-134) Time/Location	
專業核心能力： Core Professional Competencies	
課程網址：non Course Website	
課程宗旨： Course Objectives	Understand the commonly used instruments in the field of material chemistry and physics, and learn the basic principles, operation and related applications of chemical and physical equipment. Strengthen students' understanding and memory of relevant courses. 教導材料化學和物理領域常用的儀器實驗，學習化學和物理材料實驗的基本原理、操作方法及相關應用。加強學生對相關課程的理解和熟悉。
課程大綱： Outline of Lectures	To train the students to understand the physical and chemiacl properties of polymeric materials through several physical and chemical experiments using special instruments. students not only get familiar with various lab techniques, but also are able to observe the detailed reaction changes at each step. Chemistry experiments: Exp. 1. Thermometer calibration, melting point test. Exp. 2. Free radical polymerization of polystyrene. Exp. 3. Synthesis of microcapsules. Exp. 4. Purification: recrystallization, sublimation and distillation. Exp. 5. Synthesis of Kapton® and membrane fabrication (PI) Physics Experiments: EXP.1-Impact Test EXP.2-Creep Test EXP.3-Abbe Refractometer EXP.4-Limiting viscosity EXP.5-Polarizing Microscope
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	Polymer Chemistry. Polymer Physics . Material science.

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	no