# 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

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| 課程代號：TX4104301<br>Course Code<br>學分數：1<br>Credits | 必選修：必修/半學年<br>Required/Electve:Required/Half Yr.<br>先修課程：<br>Prerequisites |
| 節次教室：M6(E1-134) M7(E1-134) M8(E1-134)<br>Time/Location | |
| 專業核心能力：<br>Core Professional Competencies | |
| 課程網址：non<br>Course Website | |
| 課程宗旨：<br>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.<br>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：<br>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.<br>Chemistry experiments:<br>Exp. 1. Thermometer calibration, melting point test.<br>Exp. 2. Free radical polymerization of polystyrene.<br>Exp. 3. Synthesis of microcapsules.<br>Exp. 4. Purification: recrystallization, sublimation and distillation.<br>Exp. 5. Synthesis of Kapton® and membrane fabrication (PI)<br>Physics Experiments:<br>EXP.1-Impact Test<br>EXP.2-Creep Test<br>EXP.3- Abbe Refractometer<br>EXP.4-Limiting viscosity<br>EXP.5-Polarizing Microscope |
| 授課方式：<br>Method of Instruction | 講授 Lecture：20%<br>分組討論 Group discussion：10%<br>案例研討 Case study：10%<br>操做練習 Practical exercises：60%<br>講授 Lecture：% |
| 教科書：<br>Textbooks | Experimental Course Handouts (PPT) |
| 參考書目：<br>References | Polymer Chemistry.<br>Polymer Physics .<br>Material science. |

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| 修課須知：<br>Notice | Laboratory safety education training in the first week. |
| 評量方式：<br>Grading | Attend class on time and attitude :40%<br>Experiment Report : 30%<br>Midterm and Final examination :30% |
| 備註說明：<br>Notes | no |