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：高震宇

Instructor:Chen-Yu Kao

課程名稱：分子生醫材料

Course Title：Molecular Principle of Biomaterials

2026/11/3

課程代號：BE5027701 Course Code 學分數：3 Credits	必選修：選修/半學年 Required/Electve:Elective/Half Yr. 先修課程： Prerequisites
節次教室：M6(TR-836) M7(TR-836) M8(TR-836) Time/Location	
專業核心能力： Core Professional Competencies	
課程網址： Course Website	
課程宗旨： Course Objectives	本課程將講授生醫材料之相關學理，協助學生了解生醫材料基本概念，進而從分子層面探討生醫材料與人體之相互關係，並介紹當前最新的生醫材料技術與相關研究。 The course aims to provide students with a foundation in biomaterials. The topics include a basic understanding of biomaterials and how tissue responds to biomaterial, design criteria for biomaterials, and state of the art in biomaterial research. Ultimately, the course will provide students with the abilities needed to design new biomaterials applications.
課程大綱： Outline of Lectures	1. Overview of biomaterials 2. Classes of materials used in medicine 3. How tissue response to biomaterials-from molecular point of view 4. Design criteria for biomaterials 5. Applications of materials in medicine, biology, and artificial organ 6. Advanced biomaterials
授課方式： Method of Instruction	講授 Lecture：60% 分組討論 Group discussion：40% 案例研討 Case study：0% 操做練習 Practical exercises：0% 講授 Lecture：%
教科書： Textbooks	NA
參考書目： References	1. Biomaterials and tissue engineering [electronic resource] / edited by Oguzhan Gunduz ... [et al.]. 2023 2. Polymeric biomaterials for tissue regeneration [electronic resource] : from surface/interface design to 3D constructs / edited by Changyou Gao.2023 3. Biomimetic biomaterials for tissue regeneration and drug delivery [electronic resource] / edited by Mamoni Dash. 2022 4 .Fundamentals of biomaterials [electronic resource] / by Vasif Hasirci, Nesrin Hasirci. 2018

修課須知： Notice		
評量方式： Grading	Midterm	35%
	Homework	20%
	Final Project Report	35%
	Other	10%
備註說明： Notes	EMI	