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：施劭儒

Instructor:Shao-Ju Shih

課程名稱：生醫陶瓷

Course Title：Bioceramics

2026/11/3

課程代號： TX5012701 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： Time/Location	T2(TR-210) T3(TR-210) T4(TR-210)
專業核心能力： Core Professional Competencies	1. 具備基礎科學與材料工程專業知識之整合、創新能力。 2. 具備執行專題研究、應用研究成果，以及口頭發表與報告撰寫之能力。 3. 具備語文能力及良好之國際觀，尊重多元價值觀點。
課程網址： Course Website	https://moodle.ntust.edu.tw/
課程宗旨： Course Objectives	This course focuses on the bioceramics, a class of ceramic materials employed in medical and dental applications. Initially, various types of bioceramics are introduced. Afterwards, the corresponding preparation and characterization methods are discussed. Finally, the new concept of materials design is discussed to design the next generation bioceramic materials. The details of the course outline are listed below.
課程大綱： Outline of Lectures	1. Introduction; 2. Classification and structures of bioceramics; 3. Preparation methods; 4. Common characterization methods; 5. Inert ceramics; 6. Porous ceramics; 7. Bioactive and resorbable ceramics; 8. Radial distribution function and simulation of bioactive glasses; 9. Novel ceramic-polymer composites; 10. Advanced radiotherapy glasses
授課方式： Method of Instruction	講授 Lecture：80% 分組討論 Group discussion：0% 案例研討 Case study：20% 操做練習 Practical exercises：0% 講授 Lecture：N. A.%
教科書： Textbooks	Slides
參考書目： References	1. “An introduction to bioceramics” edited by Larry L. Hench, Imperial College Press, Second Edition, London (2007) (ISBN: 978-1-908977-15-1). 2. “Bioceramics: Properties, characterizations and applications” written by Joon Park, Springer, New York (2008) (ISBN:978-0-387-09545-5) 3. “Bio-glasses an introduction” edited by J. R. Jones and A. G. Clare, Wiley, Chichester (2012) (ISBN: 978-0-047-71161-3).
修課須知： Notice	TA is available.
評量方式： Grading	

	Content Loading (%) Midterm Exam 30 Final Exam 40 Report 20 Attendance 10 Total 100
備註說明： Notes	1. Students need the English level of above CEFR B2, which is recommended 2. Students require the fundamental knowledge of materials science.