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：徐慶琪

Instructor:Ching-Chi Hsu

課程名稱：機械設計

Course Title：Mechanical Design

2026/5/6

課程代號： IS3211301 Course Code 學分數： 3 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	T2(IB-506) T3(IB-506) W2(IB-506)
專業核心能力： Core Professional Competencies	■核心能力1.具備運用數學、科學與工程知識以解決材料相關問題之能力。 ■核心能力2.具備執行實驗與分析數據之能力。 ■核心能力5.培養團隊合作默契，具備專案管理及溝通協調能力。 ■核心能力6.具備發掘問題、邏輯分析、應用研究成果與因應複雜問題之能力。
課程網址： Course Website	
課程宗旨： Course Objectives	Apply fundamental concepts of classical mechanics to modern Mechanical design. Introduce various stress analysis methods, failure theories, and experimental methods and use them in analyzing and designing mechanical elements. Solve mechanical engineering design problems using CAE software.
課程大綱： Outline of Lectures	Load and Stress Analysis Failures Resulting from static loading Fatigue Failures Resulting from Variable loading Designing mechanical elements Application of CAE in Mechanical Engineering Design
授課方式： Method of Instruction	講授 Lecture：70% 分組討論 Group discussion：0% 案例研討 Case study：0% 操做練習 Practical exercises：0% 講授 Lecture：Application of CAE in Mechanical Engineering Design (30%)%
教科書： Textbooks	Shigley's Mechanical Engineering Design, Richard G. Budynas, J. Keith Nisbett, Eleventh Edition in SI Units, McGraw Hill.
參考書目： References	None
修課須知： Notice	
評量方式： Grading	First midterm exam: 30% Second midterm exam: 30% Final exam: 25% Attendance and Quiz: 15%

備註說明： None
Notes