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：陳瑞華

Instructor:Cherng,Rwey-Hua

課程名稱：隨機振動學

Course Title：Random Vibrations

2026/11/3

課程代號： CT6302701 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	R6(IB-609) R7(IB-609) R8(IB-609)
專業核心能力： Core Professional Competencies	
課程網址： Course Website	
課程宗旨： Course Objectives	This course gives an introduction to the evaluation of responses and performances (Safety and Serviceability) of Single-Degree-of-Freedom systems and Multiple-Degree-of-Freedom systems under "random loadings" as well as the relevant applications on wind engineering and earthquake engineering.
課程大綱： Outline of Lectures	(1)Application Fields of Random Vibrations (2)Review of Basic Probability Theory (3)Introduction to Random Processes (4)Models for Random Excitations or Loadings (5)Random Vibration of Single-Degree-of-Freedom Systems (6)Evaluation of System Performance (Safety and Serviceability) (7)Random Vibration of Multiple-Degree-of-Freedom Systems (8)Applications on Wind Engineering and Earthquake Engineering
授課方式： Method of Instruction	講授 Lecture：100% 分組討論 Group discussion：0% 案例研討 Case study：0% 操做練習 Practical exercises：0% 講授 Lecture：%
教科書： Textbooks	Classnotes
參考書目： References	(1)Yang, C. Y., Random Vibration of Structures, 1985 (2)Clough R. W. and Penzien, J, Dynamics of Structures, Third Edition, 2003 (3)Newland, D. E., An Introduction to Random Vibrations, Spectral and Wavelet Analysis, 1993 (4)Lutes and Sarkani, Random Vibrations: Analysis of Structural and Mechanical Systems, 2005
修課須知： Notice	
評量方式： Grading	Homework 20% Midterm Exam. 40% Final Exam. 40%

備註說明： For students having Knowledge on "Structural Dynamics"
Notes