

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：郭永麟

Instructor:Yong-Lin Kuo

課程名稱：動態系統之最佳參
考訊號成形控制

Course Title : Optimal Reference
Shaping for Dynamical Systems

2026/5/5

課程代號： AC5518701 Course Code 學分數： 3 Credits	必選修：選修/半學年 Required/Elective:Elective/Half Yr. 先修課程： Prerequisites
節次教室： F10(TR-514) F8(TR-514) F9(TR-514) Time/Location	
專業核心能力： Core Professional Competencies	
課程網址： Course Website	
課程宗旨： Course Objectives	
1. Provide the theoretical basis and knowledge of the control theory. 2. Train students to have the capabilities of applying the control theory.	
課程大綱： Outline of Lectures	
1. Introduction 2. Time-Delay/Input Shaping 3. Optimal Control 4. Saturating Control 5. Minimax Control 6. Friction Control 7. Numerical Approach 8. Case Studies	
授課方式： Method of Instruction	
講授 Lecture：90% 分組討論 Group discussion：0% 案例研討 Case study：10% 操做練習 Practical exercises：0% 講授 Lecture：%	
教科書： Textbooks	
1. Optimal Reference Shaping for Dynamical Systems: Theory and Applications, T. Singh, 2010, CRC Press 2. Command Generation for Dynamic Systems, William Singhose, 2011	
參考書目： References	
SCI journal papers	
修課須知： Notice	
評量方式： Grading	
1. Midterm exam (50%) 2. Final exam (50%)	
備註說明： Notes	
Matlab/Simulink might be used in class.	