

授課教師：林裕傑

Instructor: Yu Chieh Lin

課程名稱：機械手臂與參數設計之運用

Course Title : Applications of Robotics and Parametric Design

2026/5/6

課程代號：AD3123701 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：T10(TR-617) T8(TR-617) T9(TR-617) Time/Location	
專業核心能力： <ul style="list-style-type: none"> 1. 具備建築設計與鑑賞能力 2. 具備使用專業媒體、工具與設備的能力 3. 具備專業資訊統合與管理概念 4. 具備建築工程技術概念 5. 認識全球及區域性發展脈絡 Core Professional Competencies	
課程網址： Course Website https://moodle2.ntust.edu.tw/	
課程宗旨： Course Objectives 本課程旨在培養學生運用機器手臂及參數化設計工具進行創新設計與製作的能 力。透過基本操作訓練、數位流程建立與實作演練，學生將理解機器手臂在建築 與設計加工中的應用原理，並能將參數化模型有效轉化為可執行的製造指令，為 未來跨領域設計與智慧製造奠定基礎。This course aims to develop students' ability to use robotic arms and parametric design tools for innovative design and fabrication. Through basic operation training, digital workflow development, and hands-on exercises, students will gain an understanding of how robotic arms are applied in architectural and design fabrication. The course also guides students in translating parametric models into executable fabrication commands, building a solid foundation for future interdisciplinary design and smart manufacturing.	
課程大綱： Outline of Lectures 課程中將會建立學生在數位工具應用於設計中所需具備的基本能力： 1. 介紹機器手臂操作基礎與安全規範 2. 參數化設計流程與模型建構 3. 機器手臂路徑規劃與模擬 4. 加工策略與數位製造整合 5. 實作練習：將設計模型轉化為可執行製作指令，完成從數位設計到機器手臂製 作的完整流程 This course promotes the fundamental understanding and usage of parametric design and materializing digital designs through the main usage of robotics (and other fabrication processes). This course aims to promote the following: 1. Introduction to robotic arm operation and safety protocols 2. Parametric design workflows and model construction 3. Robotic arm path planning and simulation 4. Fabrication strategies and digital manufacturing integration 5. Hands-on exercises: translating design models into executable fabrication commands, completing the full workflow from digital design to robotic-arm fabrication	
授課方式： Method of Instruction 講授 Lecture：40% 分組討論 Group discussion：10%	

	案例研討 Case study : 10% 操做練習 Practical exercises : 40% 講授 Lecture : %
教科書 : Textbooks	N/A
參考書目 : References	N/A
修課須知 : Notice	N/A
評量方式 : Grading	Course will be mainly graded on attendance and project/assignments reports, weights will be dynamically adjusted based on student learning outcome. 課程成績主要依出席率與專題/作業報告評定，權重將依學生的學習成效動態調整。
備註說明 : Notes	N/A