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：呂志豪

Instructor:Shih-Hao Lu

課程名稱：數學決策模型與演化式演算法

Course Title：Mathematical Modeling and Evolutionary Algorithm

2026/11/4

課程代號： BA6631701 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	M5(MA-405) M6(MA-405) M7(MA-405)
專業核心能力： Core Professional Competencies	人工智慧輔助決策之程式設計
課程網址： Course Website	
課程宗旨： Course Objectives	This course explores computational simulation and optimization decision models, focusing on heuristic and evolutionary approaches to solving complex problems. Students will learn key algorithmic principles, analyze efficiency, and apply optimization techniques to real-world decision-making challenges. Through theoretical discussions and hands-on practice, the course equips students with the skills to design and implement effective computational solutions. Course content includes:
課程大綱： Outline of Lectures	In this course, students will learn mathematical programming and optimization decision models to design the tool for solving practical decision making problems. Moreover, they will also learn the basic concept of Artificial Intelligent (AI) and the data-driven decision making concepts during the data collecting and analyzing process. The course topics include: 1. Computational Simulation 2. Linear and Nonlinear programming 3. Optimization Decision Model 4. Programming Using Python 5. Evolutionary Algorithm 6. Final Project Presentation
授課方式： Method of Instruction	講授 Lecture：40% 分組討論 Group discussion：30% 案例研討 Case study：0% 操做練習 Practical exercises：30% 講授 Lecture：%
教科書： Textbooks	No
參考書目： References	Reading materials Will be assigned during classes.
修課須知： Notice	2 Teaching Assistants

評量方式： Grading	Class Participation 40% Midterm Presentation 30% Final Presentation 30%
備註說明： Notes	No