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：曾德峰

Instructor:Der-Feng Tseng

課程名稱：機器學習技術與應用

Course Title：Machine Learning Techniques and Applications

2026/11/3

課程代號： EE5628701 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： W6(T2-101) W7(T2-101) W8(T2-101) Time/Location	
專業核心能力： Core Professional Competencies	□ 電機領域之專業知識。 □ 研究結果分析、詮釋、組織及撰寫專業論文之能力 □ 創新思考及獨立解決問題之能力
課程網址： Course Website	
課程宗旨： Course Objectives	This course equips senior undergraduate and graduate students with essential machine learning and deep learning skills using Matlab, integrating both theory and hands-on implementation. Focus will be on classification and regression models, clustering methods. Through Matlab’s online modules (for example, Machine Learning Onramp, Deep Learning Onramp, and Machine Learning Techniques in MATLAB), students will explore key ML models, deep learning architectures (CNNs, RNNs), feature engineering, and model optimization. Emphasizing EMI (English as a Medium of Instruction), the course fosters technical communication in English, enhancing the ability of students to apply ML techniques in research and industry for data analysis, computer vision, and intelligent/wireless communications systems.
課程大綱： Outline of Lectures	• 課程介紹與機器學習概論 • 資源與語言工具介紹 • 數據的重要性、輸入與預處理 • 監督式學習 • 非監督式學習 • 強化學習 • Course Introduction and Machine Learning Overview • Introduction to Resources and Language Tools • Importance of Data, and its Importing and Preprocessing • Supervised Learning • Unsupervised Learning • Reinforcement Learning
授課方式： Method of Instruction	講授 Lecture：70% 分組討論 Group discussion：10% 案例研討 Case study：0% 操做練習 Practical exercises：20% 講授 Lecture：%
教科書： Textbooks	Lecture Notes

參考書目： References	Bishop, Christopher M. Pattern Recognition and Machine Learning. New York: Springer, 2006.
修課須知： Notice	
評量方式： Grading	Attendance 20% Participation 55% Midterm In-Class Project 10% Final In-Class Test 15%
備註說明： Notes	N/A