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：林伯慎

Instructor:Bor-Shen Lin

課程名稱：人工智慧技術與商業應用

Course Title：Artificial Intelligence Technologies and Business Applications

2026/11/3

課程代號： MI5118701 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： F2(MA-316) F3(MA-316) F4(MA-316) Time/Location	
專業核心能力： Core Professional Competencies	
課程網址： Course Website	
課程宗旨： Course Objectives	Introduction of AI, the relevant research issues, and its applications on internet services and business intelligence. The topics covered include state space search, game playing, local search, regression, classification, clustering, sequence prediction, representation learning, generative adversarial network, natural language processing and web information retrieval.
課程大綱： Outline of Lectures	Agenda 1. Problem solving based on state space search 2. Adversarial search for game playing: min-max algorithm 3. Genetic algorithm and local search 4. Classification and regression tree (CART) 5. Bayesian network & Gaussian mixture model 6. Regression 7. Clustering 8. Unsupervised Statistical Learning 9. Fundamental of Artificial Neural Network 10. Deep Learning: CNN, RNN, Encoder/Decoder, GAN, Transformer 11. Feature processing and learning (PCA, LSA, PLSA/LDA, tSNE, RBM , AE, VAE) 12. Word/Document embeddings & natural language processing 13. Information retrieval and web mining
授課方式： Method of Instruction	講授 Lecture：92% 分組討論 Group discussion：0% 案例研討 Case study：0% 操做練習 Practical exercises：0% 講授 Lecture：Final project presentation & feedback%
教科書： Textbooks	Artificial Intelligence: A Modern Approach
參考書目： References	N/A

修課須知： Notice	EMI course
評量方式： Grading	attendance 10% homework 20% mid-term 40% final project 30%
備註說明： Notes	Lectured in English