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：林筱玫

Instructor:Hsiao-Mei Lin

課程名稱：代理式AI與數位行銷應用

Course Title：Agentic AI and Digital Marketing Applications

2026/11/3

課程代號： MI5320701 Course Code	必選修：選修/半學年 Required/Electve:Elective/Half Yr.
學分數： 3 Credits	先修課程： Prerequisites
節次教室： Time/Location	F2(IB-610) F3(IB-610) F4(IB-610)
專業核心能力： Core Professional Competencies	v解決問題之能力(Problem Solving) v管理專業知識(Comprehensive management knowledge)
課程網址： Course Website	
課程宗旨： Course Objectives	This course aims to equip students with a comprehensive understanding of Agentic Artificial Intelligence (Agentic AI) and Digital Marketing technologies, focusing on their integration in data-driven decision-making and innovative applications. Starting with the fundamentals of Generative AI, students will learn to construct knowledge graphs using graph database and explore how Agentic AI can be applied in business intelligence, digital marketing, smart manufacturing, and service innovation. Through case studies and project-based learning, students will design and simulate digital twin scenarios to evaluate the transformative value of AI in enterprise decision support and digital transformation. 本課程旨在培養學生掌握代理式人工智慧（Agentic AI）與數位行銷（Digital Marketing）的核心概念與應用能力。課程將從生成式AI的技術原理出發，結合知識圖譜與智慧決策模型，帶領學生探索如何將代理式AI應用於商業智慧、數位行銷、智慧製造及服務創新等領域。透過案例研究與專案實作，學生將能設計並模擬數位孿生場景，進一步理解其在企業決策支援與數位轉型中的價值。
課程大綱： Outline of Lectures	

	1.Course Introduction: Course structure, grading policy, and trends in AI and digital marketing 2.Foundations of Generative AI: Technical principles, development history, and representative application cases 3.Agentic AI: Concepts and architecture, differences from traditional AI, and application examples 4.Knowledge Graphs and Graph Databases: Methods for data structuring, operations and hands-on practice with graph databases (e.g., Neo4j) 5.Knowledge Graphs for Intelligent Decision-Making I: Business intelligence and digital marketing cases; workflow from data to decision-making 6.Knowledge Graphs for Intelligent Decision-Making II: Business intelligence and digital marketing cases; workflow from data to decision-making 7.Project Design Workshop: Group project planning, requirements analysis, and system architecture design 8.Agentic AI Implementation: Practical development of Agentic AI for automated AI-agent workflows 9.Digital Twin Implementation: Hands-on practice with Digital Twin development using the VR Maker platform for visual integration 課程進度 1.課程導論: 課程架構、評分方式、AI與數位行銷發展趨勢 2.生成式AI基礎: 生成式AI的技術原理、發展歷程、典型應用案例 3.代理式AI (Agentic AI): 概念與架構、與傳統AI的差異、應用範例 4.知識圖譜與圖資料庫:資料結構化方法、圖資料庫(如Neo4j)操作與實作 5.知識圖譜應用於智慧決策1: 商業智慧與數位行銷案例，資料到決策的流程 6.知識圖譜應用於智慧決策2: 商業智慧與數位行銷案例，資料到決策的流程 7.專題設計工作坊: 小組專案規劃、需求分析、系統架構設計 8.代理式AI 實作:Agentic AI 的實作，以AI Agent工作流程自動化 9.數位孿生(Digital Twin)實作: Digital Twin 的實作，以VR Maker平台進行視覺整合 Weekly Schedule
授課方式： Method of Instruction	講授 Lecture：20% 分組討論 Group discussion：30% 案例研討 Case study：30% 操做練習 Practical exercises：20% 講授 Lecture：%
教科書： Textbooks	Using self-made teaching materials.
參考書目： References	Bratani , T., & Hane, O. (2025). Essential GraphRAG: Knowledge Graph-enhanced RAG. Manning Publications. Edge, D., et al. (2024). From local to global: A graph RAG approach to query-focused summarization.
修課須知： Notice	N/A
評量方式： Grading	Assignments and Evaluation 8 Labs (Individual) 30% Midterm (Team, Oral Proposal) 10% 3 Assignment (Retrieval Strategy Report) 10% Final Project System (Team Project) 35% Final Project Report (Team Project) 15% Bonus: Final Project contributes to Open Source (GitHub) 5%
備註說明： Notes	N/A