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：許聿靈

Instructor:Yu-Ling Hsu

課程名稱：智慧營運與管理

Course Title：Intelligent Operations and Management

2026/11/3

課程代號： MA6004701 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	M6(MA-101) M7(MA-101) M8(MA-101)
專業核心能力： Core Professional Competencies	具備解決工程與管理問題之能力 專業知識(Comprehensive management knowledge)
課程網址： Course Website	
課程宗旨： Course Objectives	The course aims to develop students' understanding of intelligent operational management and the role of emerging technologies in transforming manufacturing and service systems. Students will examine how artificial intelligence, digital twins, robotics, analytics, autonomous transportation, and smart service technologies can enhance operational efficiency, decision-making, customer experience, and sustainability, innovation value of the intelligent product, process and service. The purpose of this course is to teach students Intelligent Operations concepts, techniques, practical applications, business model innovation, industry transformation and related ability of operations management to cultivate high-quality and talented students for the trend of Industry 4.0.
課程大綱： Outline of Lectures	

2/23 Course Introduction and Group Sign Up
2 3/2 Intelligent Operational Management Introduction
3 3/9 Business Model Canvas
4 3/16 AI Applications in Manufacturing Fields
5 3/23 Taiwan Tech School Anniversary: No Class Today（校慶補假 放假一次）
6 3/30 Case Study: JR Harvard Case
7 4/6 National Holiday: No Class Today （清明連假 放假一次）
8 4/13 Visits to the Intelligent Operation Center
9 4/20 Case Study on Smart Hospital Management
10 4/27 Technology Tool Hands On Session (Bring Computer)
11 5/4 Intelligent Transportation Management
12 5/11 Case Study on Retail Management
13 5/18 B Corp Sunstainability
14 5/25 Final Project Presentation I
15 6/1 Final Project Presentation II
16 6/8 Final Project Revision and Submission & Class Reflection
*Adjusted according to the actual teaching

6.智慧型生產排程系統與應用
7.智慧型供應鏈與應用
8.智慧戰情室與應用
9.人機協作系統與應用
10.智慧商業模式與營運策略 1.Digital Twin
2.Enterprise Resource Planning
3.Manufacturing Execution System
4.Intelligent Machining and Inspection
5.Intelligent Preventive Maintenance
6.Intelligent Scheduling
7.Intelligent Supply Chain Management
8.Intelligent War Room
9.Human-Machine Collaboration
10.Intelligent Business Modelling and Operations Strategies

授課方式： Method of Instruction	講授 Lecture：25% 分組討論 Group discussion：25% 案例研討 Case study：25% 操做練習 Practical exercises：25% 講授 Lecture：%
教科書： Textbooks	
參考書目： References	i. William J. Stevenson, Operations Management 14e, McGraw-Hill, 2020 ii. Arturo Molina, Pedro Ponce, Jhonattan Miranda, Daniel Cortés, Enabling Systems for Intelligent Manufacturing in Industry 4.0, Springer, 2021 iii. 價值主張年代：設計思考 X 顧客不可或缺的需求=成功商業模式的獲利核心。作者：亞歷山大・奧斯瓦爾德, 伊夫・比紐赫, 葛瑞格・柏納達, 亞倫・史密斯, 翠西・帕帕達拉斯, 天下雜誌, 2017.
修課須知： Notice	We have TAs
評量方式： Grading	• Class attendance and participation (30%): • Guest Speaker reflection (10%) • Case Presentation and In Class Assignment (30%) • Final Project Presentation (30%)
備註說明： Notes	