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：喻奉天

Instructor:Vincent F. Yu

課程名稱：作業研究(二)

Course Title：Operations Research (2)

2026/11/3

課程代號： IM4104301 Course Code 學分數： 3 Credits	必選修：必修/半學年 Required/Electve:Required/Half Yr. 先修課程： Prerequisites
節次教室： Time/Location	R2(MA-101) R3(MA-101) R4(MA-101)
專業核心能力： Core Professional Competencies	
課程網址： Course Website	
課程宗旨： Course Objectives	The objective of this course is to provide students with a basic understanding of deterministic and stochastic optimization models, algorithms, and applications. Topics include network optimization models, integer programming, dynamic programming, metaheuristics, game theory, Markov chains, and queuing theory.
課程大綱： Outline of Lectures	1. Network Optimization Models 2. Integer Programming 3. Dynamic Programming 4. Metaheuristics 5. Game Theory 6. Markov Chains 7. Queuing Theory
授課方式： Method of Instruction	講授 Lecture：100% 分組討論 Group discussion：0% 案例研討 Case study：0% 操做練習 Practical exercises：0% 講授 Lecture：%
教科書： Textbooks	F. S. Hillier and G. J. Lieberman, Introduction to Operations Research, 11th Ed., McGraw-Hill, 2020.
參考書目： References	1. W. L. Winston and M. Venkataramanan, Operations Research: Applications and Algorithms, 4th Ed., Duxbury Press, 2003. 2. R. Fourier, D. M. Gay, and B. W. Kernighan, AMPL: A Modeling Language for Mathematical Programming, 2nd Ed., Thomson, 2003. (Available at www.ampl.com)
修課須知： Notice	Prerequisites: 1. An undergraduate course in linear or matrix algebra 2. An undergraduate course in probability theory 3. Operations Research (1) Students who failed Operations Research (1) should not take this course.

評量方式： Grading	1. Attendance, Homework, and Quizzes (40%) 2. Two Midterm Exams (20% each) 3. Final Exam (20%) 4. Grup Projects (Conditional, Extra Credit)
備註說明： Notes	1. Elementary matrix algebra (concept of linear independence, bases, matrix inversion, Gauss-Jordan pivotal method for solving linear equations) 2. Linear Programming 3. Probability theory (sample space, random variables, probability distributions, expected values)