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：馮輝文

Instructor:Huei-Wen Ferng

課程名稱：計算機模擬

Course Title：Computer Simulation

2026/11/3

課程代號： CS5068701 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	M2(T4-403) M3(T4-403) M4(T4-403)
專業核心能力： Core Professional Competencies	
課程網址： Course Website	
課程宗旨： Course Objectives	This course, i.e., Computer Simulation, concerns how to evaluate the performance of networks through a simulation approach (or a mathematical approach). For this approach, tools can be developed based on probability theory and statistics. To achieve this goal, three parts are included: Part I: Simulation Techniques (Including Review of Probability Theory and Statistics plus Its Advanced Materials) Part II: Case Studies (Using Selected Papers) Part III: Performance Analysis Using the Mathematical Approach
課程大綱： Outline of Lectures	Part I: Simulation Techniques (Chapters 1, 2, 4 (with supplements), 6, 8) Part II: Case Studies Part III: Performance Analysis Using the Mathematical Approach (Optional)
授課方式： Method of Instruction	講授 Lecture：80% 分組討論 Group discussion：10% 案例研討 Case study：10% 操做練習 Practical exercises：0% 講授 Lecture：%
教科書： Textbooks	Textbook 1 (Chapters 1-8) Simulation Modeling and Analysis, 5/e Averill M. Law Publisher: McGram Hill Textbook 2 (Chapter 3) Data Networks, 2/e D. Bertsekas and R. Gallager Publisher: Prentice Hall, New Jersey
參考書目： References	Reference Books: Jeremiah F. Hayes, Thimma V. J., and Ganesh Babu "Modeling and Analysis of Telecommunications Networks," Wiley. P. G. Hoel, S. C. Port, and C. J. Stone, “Introduction to Probability Theory,” Houghton Mifflin. L. Kleinrock, Queueing Systems, Vol. I: Theory, Wiley.

修課須知： Notice	1. EMI-Oriented Course 2. Participation-Included Assessment	
評量方式： Grading	1. Final Exam 2. Oral Presentation of the Final Report 3. Final Report 4. Programming Assignment 5. Participation 6. Attendance	25% 7% 18% 25% 15% 10%
備註說明： Notes	Probability Theory and Statistics	