

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

2026/5/6

<p>課程代號： CS5068701 Course Code 學分數： 3 Credits</p>	<p>必選修：選修/半學年 Required/Elective:Elective/Half Yr. 先修課程： Prerequisites</p>
<p>節次教室： M2(T4-403) M3(T4-403) M4(T4-403) Time/Location</p>	
<p>專業核心能力： Core Professional Competencies</p>	
<p>課程網址： Course Website</p>	
<p>課程宗旨： 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: Course Objectives 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</p>	
<p>課程大綱： Part I: Simulation Techniques (Chapters 1, 2, 4 (with supplements), 6, 8) Outline of Lectures Part II: Case Studies Part III: Performance Analysis Using the Mathematical Approach (Optional)</p>	
<p>授課方式： 講授 Lecture：80% Method of Instruction 分組討論 Group discussion：10% 案例研討 Case study：10% 操做練習 Practical exercises：0% 講授 Lecture：%</p>	
<p>教科書： Textbook 1 (Chapters 1-8) Textbooks Simulation Modeling and Analysis, 5/e Averill M. Law Publisher: McGraw Hill Textbook 2 (Chapter 3) Data Networks, 2/e D. Bertsekas and R. Gallager Publisher: Prentice Hall, New Jersey</p>	
<p>參考書目： Reference Books: References 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.</p>	

修課須知： 1. EMI-Oriented Course
Notice 2. Participation-Included Assessment

評量方式： Grading	1. Final Exam	25%
	2. Oral Presentation of the Final Report	7%
	3. Final Report	18%
	4. Programming Assignment	25%
	5. Participation	15%
	6. Attendance	10%

備註說明： Probability Theory and Statistics
Notes