

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：陳省隆

Instructor:Chen, Hsing-Lung

課程名稱：作業系統

Course Title : Real-Time Operating Systems

2026/6/22

<p>課程代號： ET4401701 Course Code</p> <p>學分數： 3 Credits</p>	<p>必選修：選修/半學年 Required/Electve:Elective/Half Yr.</p> <p>先修課程： Prerequisites</p>
<p>節次教室： W4(IB-409-1) W8(IB-409-1) W9(IB-409-1) 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： Course Objectives</p> <ul style="list-style-type: none"> • Presents the basic theory of operating system design and implementation in some depth. • Exposes the student to the internals of operating systems through the presentation of how they are actually implemented; throughout the text, the theory is illustrated with one running example using Linux. • Gives a practical introduction to related system services, using the POSIX interface. 	
<p>課程大綱： Outline of Lectures</p> <p>PART ONE OVERVIEW Chapter 1 Introduction Chapter 2 Operating-System Structures PART TWO PROCESS MANAGEMENT Chapter 3 Processes Chapter 4 Threads & Concurrency Chapter 5 CPU Scheduling PART THREE PROCESS SYNCHRONIZATION Chapter 6 Synchronization Tools Chapter 7 Synchronization Examples Chapter 8 Deadlocks PART FOUR MEMORY MANAGEMENT Chapter 9 Main Memory Chapter 10 Virtual Memory PART FIVE STORAGE MANAGEMENT Chapter 11 Mass-Storage Structure Chapter 12 I/O Systems PART SIX FILE SYSTEM Chapter 13 File-System Interface Chapter 14 File-System Implementation Chapter 15 File-System Internals</p>	
<p>授課方式： Method of Instruction</p> <p>講授 Lecture：90%</p> <p>分組討論 Group discussion：0%</p> <p>案例研討 Case study：0%</p> <p>操做練習 Practical exercises：10%</p> <p>講授 Lecture：%</p>	

教科書： Abraham Silberschatz, Peter Baer Galvin, and Greg Gagne, " Operating
Textbooks System Concepts 10e," John Wiley, 2019.

參考書目： John Shapley Gray, "Interprocess Communications in Linux," Prentice
References Hall, 2003.
W. Richard Stevens, "Advanced Programming in the UNIX Environment,
"Addison-Wesley, 1992.

修課須知： PPT
Notice

評量方式：	1. Homework.	10%
Grading	2. Program exercises.	30%
	3. Midterm Exam.	30%
	4. Final Exam.	30%

備註說明： familiar with C and data structures.
Notes