

Introduction to Operating Systems

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Course Scope

- Three pillars of operating systems
 - CPU management
 - Memory management
 - Storage management



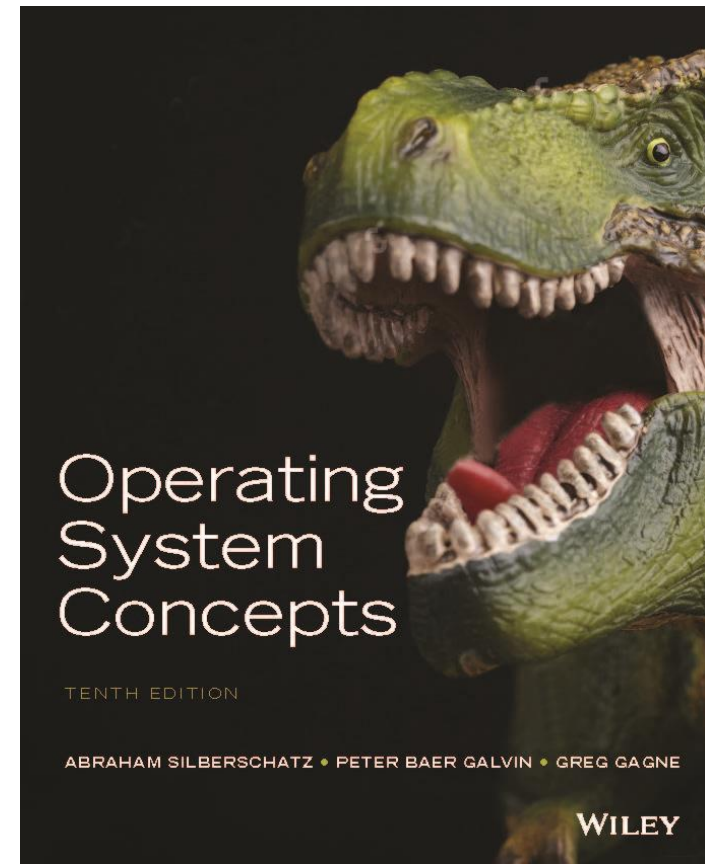
Course Scope

- Will I write a (serious) OS in my life?
 - 99% No
- Then why should I learn OS?
 - To add new functionality to an OS
 - To port an OS to new hardware
 - To write efficient programs, or at least, to avoid writing poorly performing programs



Text Book

- A. Silberschatz, P. B. Galvin, G.Gagne, “OPERATING SYSTEM CONCEPTS”
- Any edition works. There is not much difference in the core topics (ch1~ch13) among editions



Pre-Requisites

The followings are highly recommended before you take this course

- C programming
- Data structures
- Algorithms
- Computer Organization

Programming Assignments

程式作業	
P1:	A simple shell
P2:	multiprocess matrix multiplication
P3:	merge sort (thread pool)
P4:	malloc() BF/FF
P5:	cache simulation: FIFO LRU
P6:	File deduplication/link

**subject to change

Grading Policy

- Two exams
 - Midterm: 30%
 - Final: 30%
- Programming assignments
 - 6 assignments, 36%
- Teacher's flexibility:
 - Quizzes and Attendance, 4%

作業系統怎麼學？

- 作業系統不是一門『背課』

- 論述、比較、分析

- 例:恐龍課本的習題

- 9.7 Discuss situations under which the least frequently used page-replacement algorithm generates fewer page faults than the least recently used page-replacement algorithm. Also discuss under what circumstance the opposite holds.

- 捨棄『標準答案』,要能 critical thinking

- 程式作業 → 實踐出真理

- 單元習題 → 自我回顧學習重點

善用資源

- 建議跟同學討論、使用GenAI、網路孤狗
- 但! 比對重複性太高, 得 0 分
 - 同學A → 同學B
 - 同學A → GPT ← 同學B
 - 同學A → 野生版本 ← 同學B
- 討論查詢完後, 自己『從頭』寫

作業評分

- 遲交
 - 每遲交一週打八折，最低至六折
 - 最後遲交日期：第18周星期三結束前
- 抄襲處理
 - 0分
 - 從別人(機)的程式檔案改出你的作業，不管你改了什麼、改了多少，這都**不是**老師能接受的做法

上課方式

- 每週三課堂
- 每週五錄影

課程資訊

- E3
 - 重要課程公告
 - 交作業
- Google Sheet
 - 課程時間表
 - 上課投影片與預錄影片
 - 作業投影片與預錄影片
- FB 群組
 - 搜尋『2024 NYCU CS OS 概論』