Operating System (OS)

National Tsing Hua University

2022, Fall Semester

Extra Enrollment Policy (Up To 145 pp.)

- Qualification requirements
  - 電資院大學及碩士班學生、資工雙主/輔修、電資院學士班雙主修、資工第二專長
- We don't sign-up the students who have enrolled the other OS class.
  - If you are sure about if enrollment status, ask me.
- Fill in the form below **TODAY** :
  - Link: https://forms.gle/ukVhPxtQXURm8STk7
  - Decision will be made before **Tuesday night**
  - If your request is approved
    - submit your formal request on the "academic information systems" (校資系統) ASAP.
    - I will approve it by Friday.

Instructor & TA Information

- Instructor: 周志遠教授
  - Email: jchou@lsalab.cs.nthu.edu.tw
  - Office/phone: 台達602 / 42801
  - Office hour: email for appointment

- TAs: HW Spec, Demo & Grading
  - Email: os@lsalab.cs.nthu.edu.tw
  - Office/phone: 資電836 / 33538
  - Office hour: email for appointment

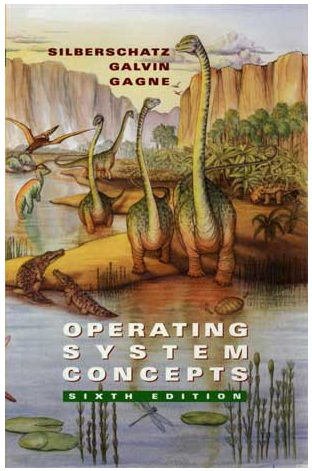
Send all your questions to here!!!
Any other contact emails may NOT be replied.

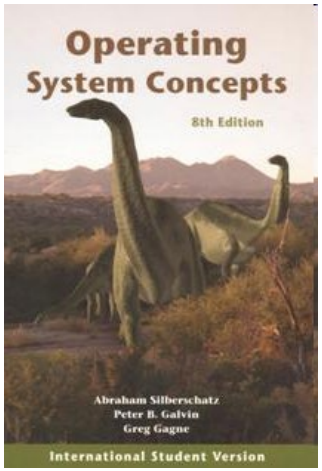
Course Website (EECLASS)

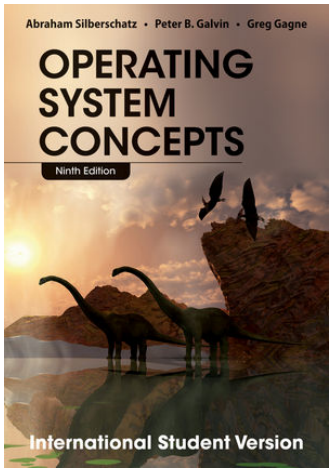
- Website: https://eeclass.nthu.edu.tw/course/9023
  - Announcement
  - Materials (lecture/project slides)
  - Discussion forums

Textbook

- Textbook:
  - "Operating System Concepts, **9th Edition**" by Silberschatz, Galvin, and Gagne. John Wiley & Sons, INC







- Prerequisites: data structures, computer organization, and C++ language

Grading Information

- Midterm: 32% (21 Nov.)
- Final: 33% (9 Jan.)
- 5 Machine Problems (team of **2 students**):
  - System Call: 5% (3 Oct. - 23 Oct.)
  - Multi-programming: 5 % (24 Oct. - 13 Nov.)
  - Process Scheduling: 10% (14 Nov. - 18 Dec.)
  - File System: 10% (19 Dec. – 15 Jan.)
  - Thread Synchronization: 5% (14 Nov. – 15 Jan.)
- Final grades might be normalized to meet department standard

Nachos MP (Machine Problem)

- Features:
  - an educational OS developed at UC Berkeley
  - clean, simple to trace, compared with Linux
  - widely used by many universities in USA
  - you will add *system call, memory manager, process scheduler* and *file system*
- *Pre-request knowledge:*
  - *C++ Language*
  - *Linux coding environment*
  - *Code tracing*

Grading Policy

- Correctness of the code
- Demo
  - Questions will be asked regarding your code
  - All team members must answer questions
- Report
  - Team member information
  - Individual contribution
    - Name, Percentage, Briefly describe of the contribution
  - Explanation of your implementations& code tracing

Grading Policy

- **Late submission is NOT accepted!**
  - No exception

- 0 points will be given to Plagiarism
  - You may discuss with each other
  - But **NEVER SHOW YOUR CODE** to others & you must write your code by yourself
  - If the codes are similar to other people and you can't questions properly during demo, you will be identified as plagiarism

Course Contents

PART ONE	OVERVIEW
PART TWO	PROCESS MANAGEMENT
PART THREE	PROCESS COORDINATION
PART FOUR	MEMORY MANAGEMENT
PART FIVE	STORAGE MANAGEMENT
PART SIX	PROTECTION AND SECURITY
PART SEVEN	DISTRIBUTED SYSTEMS
PART EIGHT	SPECIAL PURPOSE SYSTEMS
PART NINE	CASE STUDIES

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PART ONE	**OVERVIEW**
PART TWO	**PROCESS MANAGEMENT**
Chapter3	Processes Concept
Chpater4	Multithreaded Programming
Chpater5	Process Scheduling (MP3)
PART THREE	**PROCESS COORDINATION**
Chapter6	Synchronization
Chpater7	Deadlocks
PART FOUR	**MEMORY MANAGEMENT**
PART FIVE	**STORAGE MANAGEMENT**

Course Contents

Course Syllabus

- Introduction (Chap1-2)
  - **MP1: System Call**
- Processes & Threading (Chap3-4)
- Memory (Chap8-9)
  - **MP2: Memory Management**
- Midterm (11/22)
- CPU Scheduling (Chap5)
  - **MP3: Process Scheduling**
- Synchronization & Deadlock (Chap6-7)
- File System & I/O Systems (Chap10-13)
  - **MP4: File System (Disk Block Allocation)**
- Final Exam (1/10)

Prerequisite Quiz

- You are required to take the prerequisite if you want to be in the course, whether you are officially enrolled or petitioning to be added.

- Time: 11:00-11:15am