Operating System (OS)

National Tsing Hua University

2019, Fall Semester

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: 楊季蓁、陳磊恩、葉庭安、張展榕
  - Email: os@lsalab.cs.nthu.edu.tw
  - Office/phone: 資電836 / 33538
  - Office hour: email for appointment

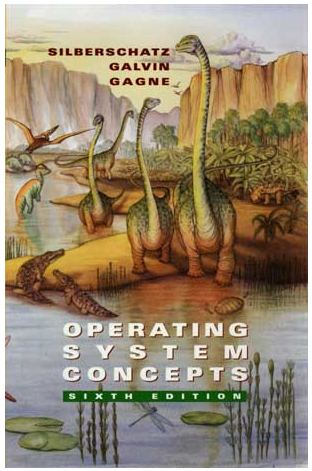
Additional Enrollment & Prerequisite Quiz

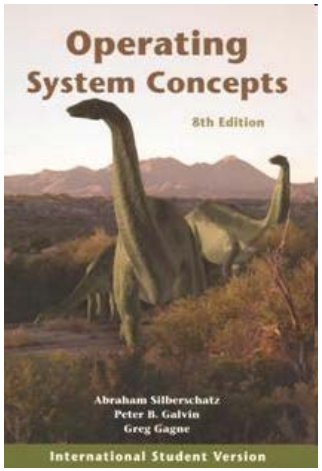
- **Everyone** will take a prerequisite quiz in the **last 10mins of the first class**
  - For whom have enrolled, it is a chance for self-estimation
  - For whom want to enroll, it is a reference for evaluating your request

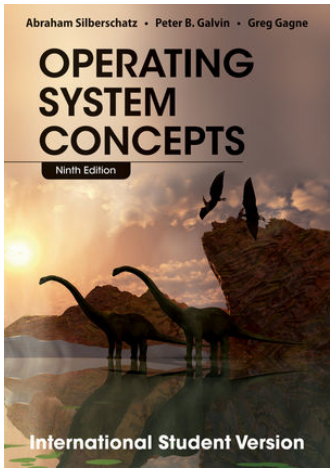
- For additional enrollment, email me (jchou@lsalab.cs.nthu.edu.tw) the info below **TODAY**. We will receive our decision this week.
  - Title: OS enrollment
  - Content:
    - Name
    - Reason to enroll
    - Relevant courses you have taken (if you are not CS major)

Textbook

- Textbook:
  - "Operating System Concepts, **10th Edition**" by Silberschatz, Galvin, and Gagne. John Wiley & Sons, INC







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

Course Website

- Website: http://lms.nthu.edu.tw/course/40575
  - Announcement
  - Materials (lecture/project slides)
  - Discussion forums

Grading Information

- Midterm: 33% (18 Nov.)
- Final: 33% (6 Jan.)
- Course Participation(Quiz): 4%
- 4 Machine Problems (carried out by team of **2**):
  - System Call: 4% (25 Sep. - 21 Oct.)
  - Multi-programming: 6 % (21 Oct. - 11 Nov.)
  - Process Scheduling: 10% (11 Nov. - 16 Dec.)
  - File System: 10% (16 Dec. – 13 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**
Chapter1	Introduction
Chpater2	System Structures (MP1)
PART TWO	**PROCESS MANAGEMENT**
PART THREE	**PROCESS COORDINATION**
PART FOUR	**MEMORY MANAGEMENT**
PART FIVE	**STORAGE MANAGEMENT**

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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
- 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