Operating Systems
Revision

Exam

- The final exam takes 2 hours
  - Covers
    - Ch5 CPU Scheduling
    - Ch6, 7 Process Synchronization
    - ch9_Main Memory
    - ch10_Virtual Memory
    - ch13_File System Interface
    - ch14_File System Implementation

Exam

- Question types
  - Multiple choices
  - Short questions
  - Comprehensive questions
- No calculator is needed.

The final examination is not limited to the questions in this ppt. These questions are only a clue for students to know how to review what we have learnt in the OS course.

Ch5 CPU Scheduling

- What is CPU Scheduler?
- What multilevel Queue?
- Real-Time CPU Scheduler, Priority-Based, Rate Monotonic Scheduling

Ch6, 7 Process Synchronization

- What is race condition?
- What is critical section problem?
- What are three requirements for a solution to solve the critical problem?
- What methods can be used to solve the critical section problems?
- What are the problems if we incorrectly use the semaphore?
- What can semaphore help in process synchronization?
- What is Monitor?

Ch9 Main Memory

- What is memory management?
- When does the address binding happen?
- What is physical memory address?
- What is logical memory address?
- In which situation, the above two addresses are same? In which situation, the above two addresses are different?
- What memory allocation methods are there? Advantages? Disadvantages?
- How to map the logical address to physical address?
- How to reduce time to find physical address?
- What methods are used to solve the big page table problem?

Example: The Intel 32 and 64-bit Architectures is not included in exam

Ch10 Virtual Memory

- What is swapping?
- What is backing store?
- What is page demanding?
- What is page fault?
- What is effective access time?
- What is locality reference?
- How to manage the free frames?
- How to determine the pages to be replaced?
- How can the thrashing happen?
- How to allocate frames?
- How to allocate kernel memory

Ch13 File System Interface

- What is file?
- What is file system?
- What basic operations can be performed on a file?
- What basic operations can be performed in a directory?
- What structures can be used to organize directories?
- How can a file system be mounted?
- How can the access to a file be controlled?

File locking is not included in the exam.

Ch14 File System Implementation

- Why a file system is organized in layers?
- What are two categories of structures used in file system implementation?
- What is File Control Block or inode?
- What open file tables are there in an operating system? What are they used for?
- What methods are used to allocate disk blocks to files?
- What are main methods used to manage free space on disk?

Virtual File System, Schemes in handling large files, Performance are not included in the exam.