SWE3004: Operating Systems  
Fall 2025

Instructor: Euiseong Seo (euiseong@gmail.com)

Credits: 3

Class Schedule:

- Tuesdays 12:00–13:15

- Thursdays 13:30–14:45

Classroom: 26310

Start Date: September 2, 2025

Language: Korean

# Course Description

This course introduces the fundamental concepts of modern operating systems, focusing on how OS manages hardware and provides services for applications. Topics include processes, scheduling, memory management, concurrency, file systems, I/O, and storage management. The course is based on the book 'Operating Systems: Three Easy Pieces' (OSTEP), and includes hands-on assignments and discussion of real-world OS mechanisms.

# Textbook

Operating Systems: Three Easy Pieces (OSTEP)

Authors: Remzi H. Arpaci-Dusseau and Andrea C. Arpaci-Dusseau

Website: https://pages.cs.wisc.edu/~remzi/OSTEP/

# Course Schedule

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| Date | Topic |
| Sep 02 (Tue) | Course Overview |
| Sep 04 (Thu) | What Is An OS |
| Sep 09 (Tue) | Program and Process |
| Sep 11 (Thu) | Scheduling Basics |
| Sep 16 (Tue) | Advanced Scheduling Schemes |
| Sep 18 (Thu) | Memory and Address Space |
| Sep 23 (Tue) | Memory Segmentation |
| Sep 25 (Thu) | No Class (Holiday) |
| Sep 30 (Tue) | Memory Paging |
| Oct 02 (Thu) | Locality and Caching |
| Oct 07 (Tue) | No Class (Holiday) |
| Oct 09 (Thu) | No Class (Holiday) |
| Oct 14 (Tue) | Paging Scheme Design |
| Oct 16 (Thu) | Memory Management Policy |
| Oct 21 (Tue) | Concurrency, Concepts and Case Studies |
| Oct 23 (Thu) | Locks |
| Oct 28 (Tue) | Conditional Variables |
| Oct 30 (Thu) | Semaphores |
| Nov 04 (Tue) | Concurrent Data Structures |
| Nov 06 (Thu) | Deadlocks |
| Nov 11 (Tue) | I/O Subsystems |
| Nov 13 (Thu) | Hard Disks and Their Management |
| Nov 18 (Tue) | RAID |
| Nov 20 (Thu) | Files and Directories |
| Nov 25 (Tue) | File System Design |
| Nov 27 (Thu) | File System Implementations |
| Dec 02 (Tue) | Flash Memory and SSDs |