CMPE 322
Operating Systems

Instructor: Tuna Tuğcu, Office: BM 43, e-mail: tugcu@boun.edu.tr
Assistants: TBA
Lecture Hours: W5, ThTh12 (PS: ThTh 67)
Classroom: BM A2 (both lectures and PS)
Website: https://moodle.boun.edu.tr

Objective:

Learn how the components of a computer system interact and focus specifically on operating systems. Study basic concepts like process management, memory management, storage management.

Textbook:

Operating System Concepts (9th Edition)
Authors: Silberschatz, Galvin, and Gagne
Publisher: John Wiley & Sons, Inc.
ISBN-13: 978-1118063330
ISBN-10: 1118063333

Grading:

Note that the exams are not during lecture hours. Arrange everything accordingly if you will register for this course.

Exam	*Weight*	*Date*
Midterm #1	20%	Nov 6, 2019 (5:30 PM)
Midterm #2	22%	Dec 4, 2019 (5:30 PM)
Final exam	28%	TBA by Registrar's Office
Projects	30%	TBA for each project

Additional Notes:

- CMPE250 or an equivalent course is a pre-requisite.
- No late projects are accepted; deadlines are strict. Therefore, do proper scheduling of your jobs.
- This course requires a lot of reading and you accept this burden if you take the course.

Tentative Outline:

- Introduction, evolution of operating systems, terminology, multiprogramming, time-sharing, computer and operating system structures, user and program interfaces
- **Process Management:** Concurrent processes, threads, process scheduling, process synchronization, critical section problem, semaphores, classical problems, monitors, atomic transactions, deadlock prevention, deadlock avoidance, deadlock detection and recovery
- **Memory Management:** Swapping, multiple partitions, paging, segmentation, virtual memory, page replacement algorithms
- **Storage Management:** File system interface. File system structures, allocation methods, free space management, file and directory implementation, disk structures and disk scheduling, I/O systems
- **Protection and Security:** Access matrix and rights, capabilities, security issues (If time permits)