CS 307 - Operating Systems
Fall 2021

This is a 3-credit course that aims to get students familiar with the operating systems concepts and design principles. Students will have some experience through theoretical lectures and practical projects.

Catalogue Data: This course covers fundamental aspects of operating systems: management of resources such as CPU, memory space and peripheral devices. Topics include concurrent processes, mutual exclusion, process communication, cooperation, deadlocks, semaphores, scheduling, and and protection. The course will also highlight important aspects of operating systems such as UNIX, Windows, etc.

Prerequisite: The class is open to any graduate and undergraduate students, who have previously taken CS 204 – Advanced Programming (or an equivalent course) and scored minimum grade of D.

Instructor:	Süha Orhun Mutluergil FENS 1098, x9606, suha.mutluergil@sabanciuniv.edu Office Hours: 14:40 – 16:30, Wednesdays (on Zoom by appointment) Zoom: https://sabanciuniv.zoom.us/j/9894421535
TAs:	Büşra Öz boz@sabanciuniv.edu Office Hours: 10:40 – 12:30, Thursdays (on Zoom by appointment) Zoom: https://sabanciuniv.zoom.us/j/2295997500 Emine Ayşe Sunar ayse.sunar@sabanciuniv.edu Office Hours: 13:40 – 15:30, Tuesdays (on Zoom by appointment) Zoom: https://sabanciuniv.zoom.us/j/9366807676 Fırat Kızılırmak fkizilirmak@sabanciuniv.edu Office Hours: 12:40 – 14:30, Wednesdays (on Zoom by appointment) Zoom: https://sabanciuniv.zoom.us/j/3434417065
LAs:	Aysun Öğüt aysuno@sabanciuniv.edu Office Hours: 10:40 – 12:30, Mondays (on Meet by appointment) Meet: https://meet.google.com/ryp-tnrd-hei Nureddin Kamadan nkamadan@sabanciuniv.edu Office Hours: 14:40 – 16:30, Fridays (on Zoom by appointment) Zoom: https://sabanciuniv.zoom.us/j/7273913272
Schedule:	Lecture: 16:40 – 17:30, Wednesdays (on Zoom) Lecture: 15:40 – 17:30, Thusdays (on Zoom) Recitation A: 17:40 – 18:30, Thursdays (on Zoom) Recitation B: 17:40 – 18:30, Wednesdays (on Zoom) **NOTE: You must join Zoom with your SU email accounts.**
Textbook:	(Primary Online Source) Remzi H. Arpaci-Dusseau and Andrea C. Arpaci-Dusseau. Operating Systems: Three Easy Pieces, 1.00 Edition, Published by CreateSpace Independent Publishing Platform, 2018, ISBN: 978-1985086593. Free online access: https://pages.cs.wisc.edu/~remzi/OSTEP/

Tentative Outline
o Introduction to Computer Systems
o Processes and Program Virtualization
o Scheduling
o Memory Virtualization

- o Paging and Swapping
- o Concurrency
- o Synchronization Mechanisms
- o I/O Management
- o Persistent Storage

Student Responsibilities
- o **Programming Assignments:** There will be 5 programming assignments. You will be required to write C/C++ programs. Your programs should compile and run properly on UNIX based operating systems.
- o **Midterm Exam:** 2 hours exam towards the end of 8th week. Midterm exam will be physical and in class. Students will answer both theoretical and computational questions using pen and paper.
- o **Final Exam:** 2-3 hours exam that will be held during the finals week. The same rules and conditions for the midterm exam apply for the final exam as well.
- o **Oral Exams:** For each of the items above, some students will be randomly called for an oral examination to clarify their work.

Grading (tentative)
Programming Assignments*   %30
Midterm Exam   %30
Final Exam   %40
* There will be a total of 5 programming assignments.

Note: The instructor holds the right to decide a policy concerning issues not already covered here.

Office Hour Policy: This semester office hours will be done online due to the pandemic. To attend the office hours of both the TA and the instructor (course staff), students must email to the corresponding course staff few hours ago. **Last minute appointment requests will not be accepted.** Each member of the course staff will reserve 2 hours per week for conducting office hours. Office hours are divided into 30-minute slots. Students can request at most one slot per week. Slots will be booked in a first come first served manner. After all the slots become full, course staff **does not guarantee** to open new slots.

Email Policy: Course staff (the TA and the instructor) are expected to return student emails within 48 hours. Course staff might not always provide immediate responses. It is advised that students do not wait until the submission deadline for doing their assignments. Course staff try to be more responsive during the deadline period but last-minute questions might not be answered due to the heavy email traffic. Students are advised to post their course related questions to the discussion forum in SUCourse since other students might answer them quickly. Course staff has the freedom of not answering a student question if the answer already exists in the course material (syllabus, discussion forums, course book or any other material in SUCourse) or if the student is expected to find the answer herself/himself.

Grace Day Policy: Each student has **5 grace days** in total that can be used throughout the semester for extending missed deadlines. It can only be used for extending **programming assignment project** deadlines. The student might use all grace days at once for one assignment or partition it among distinct assignments. Granularity of using grace days is 1-day. For instance, the student cannot ask for a 10-hour extension and save 4 days 14 hours for later. The student does not have to present any excuse or document for using his/her grace days. However, s/he must request an extension before the deadline passes. Requests must be made to the LA **Aysun Öğüt** (aysuno@sabanciuniv.edu). If the student finishes all of his/her grace days, no further extension will be given to him/her even if he/she has a valid excuse and documentation.

Academic Integrity / Plagiarism: Cheating and plagiarism will not be tolerated, see Sabanci University's statement on academic integrity for more information.