CS 307 - Operating Systems
Summer 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: 13:00 – 15:00, Thursday (by appointment) Zoom: https://sabanciuniv.zoom.us/j/9894421535
TAs:	Şeyma Selcan Mağara sselcan@sabanciuniv.edu Office Hours: 11.40 – 13.30, Monday (by appointment) Zoom: https://sabanciuniv.zoom.us/j/8037964902 Şevval Şimşek sevvalboylu@sabanciuniv.edu Office Hours: 12:00 – 14:00, Friday (by appointment) Zoom: https://sabanciuniv.zoom.us/j/8947588573?pwd=YnAzRFR2SmxSTkFqSkd2MmpYNWJQUT09
Schedule:	Lecture: 13:40 – 16:30, Tuesday (on Zoom) Lecture: 15:40 – 17:30, Wednesday (on Zoom) Lecture: 10:40 – 12:30, Thursday (on Zoom) Recitation: 14:40 – 16:30, Friday (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 3 programming assignments. You will be required to write C/C++ programs. Your programs should compile and run properly on UNIX based operating systems.
o **Take-Home Exams:** There will be 3 take home exams. Exams might require pen and paper solutions and/or videos explaining a concept or a solution.
o **Final Exam:** 2-3 hours exam that will be held during the finals week. This examination will be online, synchronous and proctored. During the examination, you must be online on the previously announced Zoom account. Your webcam and microphone should be on during the exam. In the case of non-compliance with this or other

declared exam procedures, your exam will be void. Make sure to check that your webcam and microphone function properly before the exam. You must join the exam with your SU email accounts.

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)

Take-Home Exams + Programming Assignments*	%70
Final exam	%30

* There will be a total of 6 take-home exams + programming assignments. For each student, the lowest scored assessment will be omitted, and the rest will have an equal weight of %14.

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

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 and take-home exam** 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 your TA **Şevval Şimşek** (sevvalboylu@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.