

CSCI 350 Introduction to Operating Systems

Fall 2017 Syllabus

CSCI 350 Introduction to Operating Systems class teaches the core operating system concepts, mechanisms, and their implementations.

Instructor	Email	Office	Office Hours	Lecture
Tatyana Ryutov	tryutov@usc.edu	TBD	TBD	MoWe 2:00 - 3:50pm

Required Textbooks

T1: "Operating Systems: Principles and Practice" by Thomas Anderson and Mike Dahlin

T2: "Operating System Concepts" by Abraham Silberschatz, Peter Galvin, and Greg Gagne

Course Website: <https://piazza.com/usc/fall2017/csci350>

Blackboard will be used for posting of grades.

Piazza will be used for lectures, announcements, assignments, and intra-class communication.

Messages that do not need a particular instructor's attention should be posted to Piazza with the appropriate privacy setting.

Grading

Grading method will be relative and on the curve.

Artifact	Weight	Date
Exam 1	20%	September 27
Exam 2	20%	October 30
Final Exam	30%	December 8
Programming Projects	30%	various

One of your programming projects will count as 5% of your grade, while the other two will count as 10% each. For most students, the lowest score will count as 5%. However, any student found to be culpable of an academic honesty violation on one or more programming assignments may not use such an assignment for their "half weight" project.

In addition, there is a checkpoint for project 2 on February 24 at 11:59 PM worth 5% of your grade. Grace days may not be used to extend the checkpoint.

Each student will receive a private code repository on the course's GitHub Organization to use for the development and submission of all assignments. We will only accept work submitted through this organization; in order to gain access, you must first complete our online quiz about the project rules. This quiz will be posted and pinned on Piazza.

Academic Honesty and Programming Projects

Please see the programming project regulations handout for a description of what collaboration is and is not acceptable in programming assignments, as well as how to credit acceptable assistance on these assignments. In any course with a pending academic honesty violation report, you may not drop the course; if you drop the course and are later discovered to have violated the academic honesty agreement, you will be re-enrolled.

Exams

You will be provided with paper on which to take the exam. Both non-final exams will be held *at the start of lecture* on the designated days. Exams will be individual effort, closed-book and closed-notes. You will be allowed **one** 8.5x11inch handwritten note sheet (front & back) on the exams.

Students requiring alternate exam arrangements must make such requests within the first two weeks of the term, or as soon as possible after knowing of the conflict or requirement.

Late Policy and Grace Days

Three times during the semester, a student may extend the due date of a programming assignment by twenty-four hours without needing prior permission. These are known as “grace days.” In order to use a grace day, you must submit a form (which will be provided) before the project's non-extended deadline.

Please note that grace days are *in place of* “excused late” submissions, not in addition to. If you request additional grace days from the instructor, you must have a documented reason for each grace day used to accompany your request. Once you have used your grace days, any late submission will not be accepted and graded as a 0.

Note: There is no grace period. Even if you submit a few minutes after the deadline, you will need to use a grace day (even if the wireless network in your dorm room is down or you have a github issue, etc.). It is your job to be on time and not cut it too close. Remember Murphy's Law and leave time for things to “go wrong.” The due time of 11:59 PM is Pacific time and is based on our clock.

Projected Schedule

Class sequence, dates, reading assignments, and topics are subject to change as the semester proceeds. Any revisions will be noted and announced in class.

Week	Tu/Th	Topic	Reading
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1	8/21 8/23	1. Introduction, OS History 2. Process abstraction, Concurrency	T1: Chapter 1 T1: Chapters 2.1; 4.1-4.3
2	8/28 8/30	3. Concurrency and Threads 4. Synchronization, PintOS intro	T1: Chapters 4.4-4.9 T1: Chapter 5.1
3	9/4 9/6	No Class USC Holiday 5. Synchronization, Project1	T1: Chapters 5.2-5.5
4	9/11 9/13	6. Synchronization 7. Scheduling	T1: Chapters 5.7; 5.8; T1: Chapters 7.1-7.4
5	9/18 9/20	8. Scheduling 9. The Kernel Abstraction	T1: Chapters 7.5; 7.6 T2: Chapters 6.5; 6.6 T1: Chapters 2.2-2.8
6	9/25 9/27	10. The Kernel Abstraction Exam1 , Project2	T1: Chapters 2.8; 2.10
7	10/2 10/4	11. The Programming Interface 12. Advanced Synchronization	T1: Chapter 3 T1: Chapters 6.1-6.4
8	10/9 10/11	13. Advanced Synchronization 14. Memory Management	T1: Chapters 6.5; 6.6 T1: Chapters 8.2.1-8.2.4
9	10/16 10/18	15. Address Translation 16. Virtual Memory, Page Replacement	T1: Chapter 8.3 T2: Chapters 8.2-8.4 T2: Chapters 9.4-9.6
10	10/23 10/25	17. Caching 18. File Systems	T1: Chapter 9 T1: Chapter 11
11	10/30 11/1	Exam2 , Project3 19. Storage Devices, Disc Scheduling	T1: Chapter 12.1 T2: Chapters 10.1-10.6
12	11/6 11/8	20. File System Implementation 21. Files and Directories	T2: Chapters 12.1; 12.3-12.5; 12.6; 12.8 T1: Chapters 13.1-13.3.3
13	11/13 11/15	22. Flash Storage, COW File Systems 23. Reliable Storage, RAID	T1: Chapters 12.2; 13.3.4 T1: Chapter 14
14	11/20 11/22	24. I/O Systems 25. Protection and Security	T2: Chapters 13.1-13.4 T2: Chapters 14.1-14.6;14
15	11/27 11/29	26. Trusted Systems Design 27. Cloud Computing Intro, Wrap-Up	

Academic Conduct

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Section 11, Behavior Violating University Standards <https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions>. Other forms of academic dishonesty are equally unacceptable. See

additional information in SCampus and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct>.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the Office of Equity and Diversity <http://equity.usc.edu> or to the Department of Public Safety <http://adminopsnet.usc.edu/department/department-public-safety>. This is important for the safety of the whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. The Center for Women and Men <http://www.usc.edu/student-affairs/cwm/> provides 24/7 confidential support, and the sexual assault resource center webpage <http://sarc.usc.edu> describes reporting options and other resources.

Support Systems

A number of USC's schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the American Language Institute <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students. The Office of Disability Services and Programs http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, USC Emergency Information <http://emergency.usc.edu> will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

Students with Disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me as early in the semester as possible. Your letter must be specific as to the nature of any accommodations granted. DSP is located in STU 301 and is open 8:30 am to 5:30 pm, Monday through Friday. The telephone number for DSP is (213) 740-0776.