

COSC 3360/6310 COURSE SYLLABUS

<i>Semester and Year Course Offered</i>	<i>Spring 2021</i>
<i>Department</i>	<i>Computer Science</i>
<i>Course Number and Name</i>	<i>3360—Principles of Operating Systems</i>
<i>Instructor:</i>	<i>Jehan-François Pâris</i>
<i>E-mail Address:</i>	<i>jfparis AT uh DOT edu</i>
<i>Office:</i>	PGH 569
<i>Telephone:</i>	By email appointment only
<i>Class Schedule</i>	MW 4:00-5:30 pm online on MS Teams
<i>Online Office Hours:</i>	MW 5:45-6:30 pm on MS Teams F 10:00-10:30 am primarily for overseas students on MS Teams
<i>Web Pages:</i>	www.cs.uh.edu/~paris/3360/resources.htm
<i>Prulu course page</i>	prulu.com/class/6115/cosc-3360-section-14366/
<i>Teaching Assistants:</i>	<ul style="list-style-type: none">▪ <i>Aftab Hussain</i> (ahussain27 AT uh DOT edu) <i>Online hours:</i> TuTh 5:00-7:30 PM on MS Teams▪ <i>Pavan Kumar Paluri</i> (pvpaluri AT uh DOT edu) <i>Online hours:</i> TuTh 11:00 AM-12:00 PM on MS Teams▪ <i>Christos Smailis</i> (csmailis AT uh DOT edu) <i>Online hours:</i> MW 2:00-4:00 pm on MS Teams

The information contained in this class syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.

LEARNING OBJECTIVES

Understanding the fundamental aspects of operating system operation; learning how to create and control processes in a UNIX environment; learning how to establish communication channels between processes and how to synchronize processes and threads.

MAJOR ASSIGNMENTS/EXAMINATIONS

Your grades will be based on five short quizzes (60 percent of your grade) and three programming assignments (40 percent). The five quizzes will be *open book*. They will be *on Blackboard*, and will require the *Respondus lockdown browser with the optional camera*. They will cover all the materials discussed in class and were not on a previous quiz.

All programming assignments will be in C or C++ under Linux and submitted through your Blackboard account. They will be graded for *correctness* and respect of *good programming practices* such as *modularity* and *documentation*. To get full credit, they *must* run correctly under either Ubuntu LTS 18.04 or Red Hat7.4. Be sure to dedicate enough time to them. Late assignments will be assessed a penalty of *5 points per day* unless announced otherwise. You will be given a total of *three* grace days to be used at your discretion. You do not need anyone's permission to use them.

People failing the assignments or the examinations will fail the course.

No cheating will be tolerated on any graded assignment or quiz: *what you turn in must be your own work. The minimum penalty for any transgression will be an F grade for the course. You have been warned.*

REQUIRED READINGS

J.-F. Pâris, *Fundamentals of Operating Systems*, <http://www2.cs.uh.edu/~paris/3360/PowerPoint/> (also on MS Teams).

RECOMMENDED READINGS

Remzi H. Arpaci-Dusseau and Andrea C. Arpaci-Dusseau, *Operating Systems: Three Easy Pieces*, <http://pages.cs.wisc.edu/~remzi/OSTEP/>. (Free online)

TENTATIVE LIST OF DISCUSSION/LECTURE TOPICS

<i>Week</i>	<i>Topic</i>
1-2	<i>Introduction, interrupts, OS. organization.</i>
3-4	<i>Processes, process creation and deletion, client/server model, server organization, lightweight processes and threads. First quiz on Monday February 8.</i>
5-6	<i>Scheduling. Inter-process communication.</i>
7-8	<i>Second quiz on Monday, March 1. Inter-process synchronization, semaphores, monitors, condition variables</i>
9-10	<i>Deadlocks. Third quiz on Monday, March 29.</i>
11-12	<i>Memory management. Virtual memory management.</i>
13-15	<i>Fourth quiz on Monday, April 19. File systems.</i>
<i>Finals' week</i>	<i>Fifth quiz on Friday, May 7 at <u>5 PM</u></i>

HANDS-ON LINUX EXPERIENCE

The best way to learn a computing environment is to use it to solve real problems. For this reason, you will all have to install some version of UNIX on your personal computer. Your simplest options are either learning to use your Mac shell or installing the Windows Subsystem for Linux (WSL) on your PC. The best tutorial for the latter option is <https://docs.microsoft.com/en-us/windows/wsl/install-win10>

I do not recommend installing Cygwin on your PC because it does not seem to handle all Pthread synchronization primitives in a correct fashion. This might be your sole option if you have a PC that does not run the 64-bit version of Windows 10. If this is the case, you should use your class account.

IMPORTANT

1. I want my classes to be safe spaces for all students. There is **zero tolerance** for discrimination or hate speech on any ground, including race, ethnic origin, religion, sexual orientation, gender and gender identity, or political beliefs.
2. The interim grading policy that was in place during the spring and fall 2020 sessions is back. **Letter grades and face to face teaching will be back in fall 2021.**
3. While all lectures will be recorded for later viewing, you are still expected to take all five quizzes ***at the specified time and dates*** along with the other students. Students who cannot take the test due to excused absences and other extenuating circumstances or would have to take it after midnight due to time zone differences will be offered the option to take makeup exams.
4. Please contact me if you have ***any special need or are experiencing any hardship conditions***. We will work together around them. ***Do not wait until the end of the semester.***
5. Please verify that the university has your ***correct email address***: I will use it whenever I have to get in touch with you for things like inviting you to the Prulu course page or asking about missing assignments.
6. Please refer to the ***MS Teams course pages*** for course notes, quiz solutions, links to video lectures and other announcements.
7. Please use the ***Prulu course pages*** for all non-personal questions so that they will be answered faster and the answers can be shared by all students.

THE PROVOST OFFICE REQUIRES THE INCLUSION OF THE FOLLOWING LANGUAGE IN ALL SYLLABI

Excused Absence Policy (required for all courses)

Regular class attendance, participation, and engagement in coursework are important contributors to student success. Absences may be excused as provided in the University of Houston [Undergraduate Excused Absence Policy](#) and [Graduate Excused Absence Policy](#) for reasons including: medical illness of student or close relative, death of a close family member, legal or government proceeding that a student is obligated to attend, recognized professional and educational activities where the student is presenting, and University-sponsored activity or athletic competition. Under these policies, students with excused absences will be provided with an opportunity to make up any quiz, exam or other work that contributes to the course grade or a satisfactory alternative. Please read the full policy for details regarding reasons for excused absences, the approval process, and extended absences. Additional policies address absences related to [military service](#), [religious holy days](#), [pregnancy and related conditions](#), and [disability](#).

Recording of Class (required for all courses)

Students may not record all or part of class, livestream all or part of class, or make/distribute screen captures, without advanced written consent of the instructor. If you have or think you may have a disability such that you need to record class-related activities, please contact the [Center for Students with DisABILITIES](#). If you have an accommodation to record class-related activities, those recordings may not be shared with any other student, whether in this course or not, or with any other person or on any other platform. Classes may be recorded by the instructor. Students may use instructor's recordings for their own studying and notetaking. Instructor's recordings are not authorized to be shared with anyone without the prior written approval of the instructor. Failure to comply with requirements regarding recordings will result in a disciplinary referral to the Dean of Students Office and may result in disciplinary action.

Syllabus Changes (required for all courses)

Due to the changing nature of the COVID-19 pandemic, please note that the instructor may need to make modifications to the course syllabus and may do so at any time. Notice of such changes will be announced as quickly as possible through the official MS Teams pages and/or the Prulu course pages.

OTHER OFFICIAL ANNOUNCEMENTS

Resources for Online Learning

The University of Houston is committed to student success, and provides information to optimize the online learning experience through our [Power-On](#) website. Please visit this website for a comprehensive set of resources, tools, and tips including: obtaining access to the internet, AccessUH, and Blackboard; requesting a laptop through the Laptop Loaner Program; using your smartphone as a webcam; and downloading Microsoft Office 365 at no cost. For questions or assistance, contact UHOnline@uh.edu.

Webcam

Access to a webcam is required for students participating remotely in this course. Webcams **must** be turned on during exams to ensure the academic integrity of exam administration.

Helpful Information

- ✓ COVID-19 Updates: <https://uh.edu/covid-19/>
- ✓ Coogs Care: <https://www.uh.edu/dsaes/coogscare/>
- ✓ Laptop Checkout Requests: <https://www.uh.edu/infotech/about/planning/off-campus/index.php#do-you-need-a-laptop>
- ✓ Health FAQs: <https://uh.edu/covid-19/faq/health-wellness-prevention-faqs/>
- ✓ Student Health Center: <https://uh.edu/class/english/lcc/current-students/student-health-center/index.php>