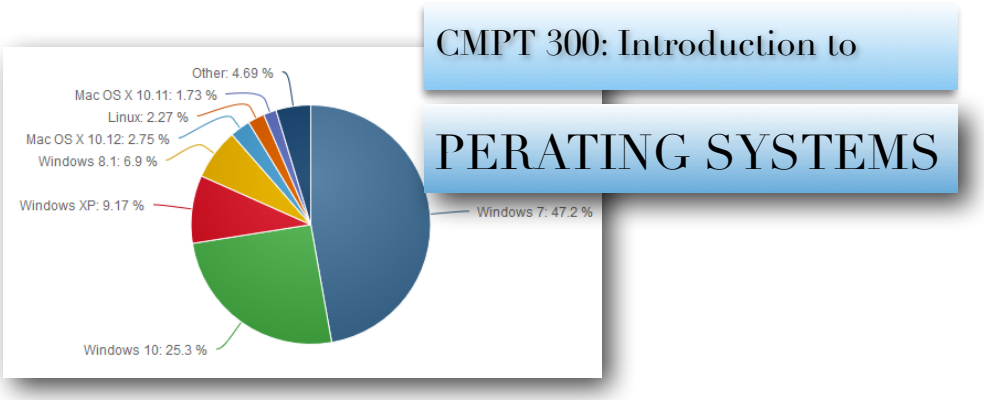

Introduction

This course deals with design and implementation principles of operating systems. This course will touch on many subjects in this area, but will not explore any one in great detail. The emphasis will be on fundamental operating system issues and principles.

Tentative Outline of Topics Covered:

- History, Evolution, and Philosophies
- Tasking and Processes
- Critical sections and mutual exclusion
- Synchronization and IPC
- Process and Kernel Design
- Physical and Virtual Memory Organization
- I/O processing and File systems
- Deadlock

Note: at a minimum, you will need access to a computer with the ability to access the CSIL lab remotely to complete this course. You will need a stable internet connection and a digital camera (e.g. smartphone) for tests in the course.

Lectures, People and Office Hours

Lectures:

Sections D100: 12:30 - 1:30pm on Mondays, Wednesdays, and Fridays

All lectures will be delivered online, with recordings available on the course website. As a result, Simon Fraser University may collect your image, voice, name, personal views and opinions, and course work under the legal authority of the University Act and the Freedom of Information and Protection of Privacy. This information is related directly to and needed by the University to support student learning only (i.e., posting in the Learning Management System for students to review). If you have any questions about the collection and use of this information please contact your instructor.

Instructors:

Section D100: Harinder Singh Khangura (khangura@sfu.ca)
Office Hours: Mondays 1:30 – 2:30pm
Wednesdays & Fridays 1:30 – 3:30pm

Please feel free to arrange appointments regarding personal matters with the instructor via email. All general questions should be asked via the discussion forum or during office hours.

CMPT 300: Intro to Operating Systems

Teaching Assistants:

Sameer Ahmed (saa141@sfu.ca)
Suraj Swaroop (sswaroop@sfu.ca)
Gandong Xu (gxa4@sfu.ca)

Textbook

Required Book

Operating System Concepts, 10th Edition (Ebook available), Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, J. Wiley & Sons, 2018 (Any other intro O.S. book would probably suffice as well, including previous editions of this book)

Recommended Book

Unix System Programming: a programmers guide to software development, 2nd edition, Keith Haviland, Dina Gray and Ben Salama, Addison-Wesley, 1999 (For those who have never touched a Unix system)

Reference Books

Modern Operating Systems, 4th edition, Andrew S. Tanenbaum, Prentice Hall, 2014

Operating Systems: Internals and Design Principles, 9th Edition, William Stallings, Prentice Hall, 2018 (also available as an eBook)

Marking Scheme

- **35% assignments** (assignments are due roughly every three weeks; late assignments are penalized 5% per day, for a maximum of 7 days; in the event of illness, a doctor's note is required)
- **25% quizzes** (~5 quizzes worth ~5% each, quizzes occur roughly every two weeks during lecture time)
- **20% midterm** (during lecture time, *tentatively* scheduled for week 8 of the term)
- **20% final exam** (during the final exam schedule)

All tests will be conducted online at fixed times. Tests will be open book and open internet, however all work submitted must be your own and all students must work on their own. More details on the format and allowances will be given as the semester progresses. Photograph/video may be used for proctoring and/or verifying student identity during tests.

Students may be expected to attend follow-up meetings with an instructor for verification of the work submitted for assignments and/or tests.

Students must attain an overall passing grade on the weighted average of tests in the course in order to obtain a clear pass (C- or better).

On-Line Services

You will have available to you a reasonably complete set of services through the WWW. Lecture notes, discussion forums, assignment descriptions, sample exams, and various other resources will be made available on the course web-page. The URL is:

https://coursys.sfu.ca/2020fa-cmpt-300-d1/pages/

Discussion forums will be hosted on Piazza, and all students are required to use the service. You are free to use an anonymous email address when signing up.

Academic Conduct

As a member of the SFU community, you are expected to abide by the rules of academic honesty and student conduct as detailed in the calendar. Ignorance of these policies is no excuse if you run afoul of them!

Submitting the work of another person as your own (i.e. plagiarism) constitutes academic misconduct, as does communication with others (either as a donor or recipient) in ways other than those permitted for assignments and tests. Specifically, for this course, the rules are as follows:

- Assignments are to be done alone (or with your group members if group work is allowed). You may not, under any circumstances, submit any work not written by you or look at another student/group's work. You may not share your work with others.
- You are, however, encouraged to discuss the approach you used to solve a problem with your fellow students. This discussion must not involve any specific details, only the approach used. You are not permitted to take any written/recorded notes away from your discussion.
- You are permitted to get help on implementation issues (e.g. debugging code) from other students, but all work you submit must be your own.
- All work submitted for the online quizzes and exams must be your own. You are permitted to use your notes and resources found online, but all students are expected to work on their own.

Violations of these rules constitute serious academic misconduct, and they are subject to penalties ranging from a grade of zero on a particular assignment to indefinite suspension from the University. If you are in any doubt about the interpretation of these rules, consult the instructor or a TA!