CMPT 300: Introduction to

PERATING SYSTEMS

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, or be willing to work exclusively in the CSIL labs on campus. In the event of a long stretch of online-only course delivery, 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:

Section D200:   10:30am - 12:20pm Mondays in room SRYE 2016
                       10:30 - 11:20am Wednesdays in room SRYE 2016

Note: Lectures will be delivered in person, unless the University determines it is not safe to do so.

Attendance at certain lectures for tests is mandatory, regardless of whether they are in-person or online.

Instructor:

Section D200:   Harinder Singh Khangura (khangura@sfu.ca)
                 Office Hours: Mondays   9:30 – 10:20am
                                  Wednesdays   11:30am – 12:30pm
                                  Fridays   1:00 – 2:00pm

Office hours will be conducted remotely via Zoom. 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 Assistant:

> Jenish Rudani (jrr7@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

- · **25% 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)
- · **30% midterms (**2 midterms during lecture time)
- · **45% final exam** (during the final exam schedule)

All midterms will be in-person during lecture time. More details on the format and allowances will be given as the semester progresses.

The above marking scheme is *tentative* and may change, especially if online-only teaching becomes necessary.

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/2023sp-cmpt-300-d2/pages/

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.

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!