Overview

Welcome to CSC469H / CSC2208H: Advanced Operating Systems.
This course builds on the concepts introduced in a standard first course on operating systems (such as CSC369H) to provide students with a deeper understanding of the internal workings of operating systems, and the impact of system-level implementation choices on user-level applications. These insights are important both for students embarking on a research program in computer systems, and for computing professionals who will work with the development and deployment of computer systems. Topics include operating system design and internal structure, benchmarking and performance evaluation, alternatives for inter-process communication, advanced synchronization strategies including non-blocking synchronization, virtual memory solutions for large address spaces and multiprocessors, multiprocessor scheduling, fault tolerance, and security.

Contact Information

Instructor	Bogdan Simion
TA	Alexey Khrabrov & Andy Hwang
Lecture	Mondays + Wednesdays 10-11 (SS 2127)
Tutorial	Fridays 10-11 (SS 2127)
Website	http://www.cdf.toronto.edu/~csc469h/fall/
Office	BA 4268
Office Hours	TBA
Email	bogdan [at] cs.toronto.edu

- **Website and Discussion Board**: The course website is required reading. It contains a calendar, assignment handouts, documentation and tutorials, policies, and more.

  (`http://www.cdf.toronto.edu/~csc469h/fall/`)

  Most importantly, the page has a link to a discussion board. A shared discussion board will help you get a faster response to any questions – but this will only work if you participate! The board is the best place to get answers to your questions, and we will also use it to post announcements and updates. Don't be the last to find out the midterm room has been changed – check the board regularly for announcements!

- **Email**: If you are having trouble with the course material or if you need extra help, please do not hesitate to contact me. I will answer as soon as possible (usually within 24-48 hours, longer on weekends). Keep in mind that the closer to an assignment due date that you send an email, the longer your wait for a reply is likely to be due to increased email volume.

  Please follow these guidelines for email correspondence:

  1. Read the announcements on the discussion board to see if your question has already been answered.
  2. If your question may be of interest to other students (e.g., a question about an assignment), post to the discussion board instead of sending email. If your question is personal (e.g., a question about missing a test due to illness), definitely send email.
  3. Use a good subject. Include the course number (to avoid the spam filter) and an informative topic (for example, `"CSC469: problem compiling libraries for A1"`).

Required Texts

- None. Required readings from the research literature will be posted on the course web site.

Recommended Texts

- Jerome H. Saltzer and M. Frans Kaashoek: *Principles of Computer System Design.* Morgan Kaufmann (2009).
- Andrew Tanenbaum: *Modern Operating Systems.* Prentice Hall (2001 or 2007).
- K.N. King: *C Programming: A Modern Approach.* Norton and Co (1996).

Marking Scheme

Work	Notes	Weight	Due Date
Assignment 1	Benchmarking	15%	Oct 14, 11:59PM
Midterm	In lecture	15%	Oct 24
Assignment 2	Concurrency	15%	Nov 11, 11:59PM
Assignment 3	Fault Tolerance	15%	Dec 6, 11:59PM
Final exam	3 hours	40%	*See exam schedule*

All assignments should be completed in teams of two. Start looking for a partner now! You must form groups on MarkUs at the latest 48 hours before the deadline, and email me your group number and CDF IDs of the members (again, no later than 48 hours before the deadline).

Late Policy

All assignments and exercises are submitted electronically and are due at **11:59 p.m.** on the due date. Each student begins the semester with three grace day "tokens". One token *per team member* is required to use a grace day, so each team has at most three grace tokens for the term. Once the grace day tokens are used up, late work will not be accepted.

Use your tokens wisely to manage your workload throughout the semester. Note however that we are unable to accept term work after the last day of classes, so for the last assignment you may not use your full grace tokens.

In the event of an illness or catastrophe, get proper documentation (e.g., medical certificate) and contact me (by email, or in person) **as soon as possible**. It is always easier to make alternate arrangements before the due date or test day.

Remarking

Since your assignments are submitted electronically and will usually be tested with the assistance of an automated testing program, you must follow the submission instructions exactly. Assignments that are remarked due to incorrect submission (including errors or warnings that lead to a failed compile) will be assessed a 10% penalty.

Requests for remarking should be submitted on MarkUs no later than one week after the assignment or test has been returned to the class.

Academic Offenses

All of the work you submit must be your own and your work must not be submitted by someone else. Plagiarism is academic fraud and is taken seriously. Please read the Rules and Regulations from the U of T Calendar, especially the Code of Behaviour on Academic Matters.

`http://www.artsci.utoronto.ca/osai/students`

Here are a couple of general guidelines to help you avoid plagiarism:

- Never look at another student's assignment solution, whether it is on paper or on the computer screen, and never show another student your assignment solution. This applies to all drafts of a solution and to incomplete solutions.
- We encourage you to discuss course concepts and to study for exams with other students, but the assignments should be your and your partner's work. The easiest way to avoid plagiarism is to only discuss the assignment with your partner or the instructor. Similarly, google (and wikipedia) may help you with course material, but do not use the internet to look for solutions to the assignment problems (yes, that includes github and other such similar resources!).