2023 Fall Syllabus
ECE 344: Operating Systems
Jonathan Eyolfson

Outcome.   The high-level goal of this course is for students to understand the design and implementation of operating systems software.

Topics.   Operating system structure, processes, threads, synchronization, CPU scheduling, memory management, file systems, input/output, multiple processor systems, virtualization, protection, and security. The laboratory exercises will require implementation of part of an operating system.

Schedule.   Classes start September 7 and end December 6. There will be no lectures on September 29 and October 9.

Section	Time	Location
LEC0101	Tuesday 2 PM to 3 PM	Room MB 128
	Thursday 2 PM to 3 PM	Room BA 1130
	Friday 2 PM to 3 PM	Room NL 6
LEC0102	Tuesday 4 PM to 5 PM	Room MC 254
	Thursday 3 PM to 4 PM	Room MC 254
	Friday 3 PM to 4 PM	Room NL 6
LEC0103	Monday 5 PM to 6 PM	Room MC 252
	Tuesday 5 PM to 6 PM	Room MC 252
	Thursday 5 PM to 6 PM	Room MC 252
PRA0101	Friday 3 PM to 6 PM	Room GB 243
	Friday 3 PM to 6 PM	Room GB 251
PRA0102	Wednesday 3 PM to 6 PM	Room GB 243
	Wednesday 3 PM to 6 PM	Room GB 251
PRA0103	Wednesday 12 PM to 3 PM	Room GB 243
	Wednesday 12 PM to 3 PM	Room GB 251
PRA0104	Tuesday 12 PM to 3 PM	Room GB 243

Discussion.   We will primarily use Discord for real-time questions and answers.

Materials.   Lectures are posted on my website: https://eyolfson.com/courses/ece344/. Private links and grades posted on Quercus. Code is posted to our Git server: https://laforge.eecg.utoronto.ca/. The book "Operating Systems: Three Easy Pieces" will complement the lectures.

Evaluation. This course contains 6 labs, a midterm and final exam. The weights and due dates are below.

Assessment	Weight	Due Date
Lab 0	1%	September 13
Lab 1	4%	September 20
Lab 2	4%	October 4
Lab 3	4%	October 18
Lab 4	4%	November 5
Midterm Exam	25%	November 15 @ 6:30 PM
Lab 5	4%	November 22
Lab 6	4%	December 6
Final Exam	50%	December 8 @ 9:30 AM

Students must submit at least 4 of 6 labs to complete the course.

Labs. Submissions are done using the Git server. We will provide students with a Git repository, and students are required to push their code for submission. Students submission time is considered when they push their code to the server, not their local timestamps. We do not accept late submissions.

Final Exam. Our final exam will be "Type C3" and "Type 3" as described by the Undergraduate Exam Types and Permitted Calculators.

> **Type C.** A "closed book" examination. A student may take a single, double-sided aid sheet to a Type C exam. The aid sheet is for personal use only and must be printed using the Faculty's template. Students may enter information on both sides of the aid sheet, without restriction. Such entries will be handwritten and not mechanically reproduced. Nothing may be fixed or appended to the sheet. The template may not be modified in any way and must be printed on 8.5" x 11" paper.

> **Type 3.** Non-programmable calculators from a list of approved calculators as issued by the Faculty Registrar. See a list of approved calculators below.

> - Casio FX-991 (EX recommended; any suffix is acceptable, including ES, PLUS, ES PLUSC, MS, MSPLUS2)
> - Sharp EL-520 (any suffix is acceptable, including X, XT)
> - Sharp EL-W516 (any suffix is acceptable, including TBSL, XG, XGB-SL)
> - Texas Instruments TI-30X (any suffix is acceptable, including a, IIS, XS)

Term-Work Petitions. Students may encounter unforeseen or uncontrollable circumstances that can severely interfere with their ability to fulfil their academic obligations. Some examples of reasons you may consider submitting a petition: severe personal illness, illness or death of a close family member, personal or family crisis, or other extenuating circumstances. In this scenario, submit a term-work petition through the Engineering Portal. Any missed assessments will have their weight transferred to the final exam.

Academic Integrity. We expect you to follow the University's Code of Behaviour on Academic Matters. We will not tolerate any offenses. Cheating hurts your learning, and your fellow students. This includes posting your course Git repository to the public (e.g. on GitHub). Note that this policy applies after the semester as well.

University Land Acknowledgement.   I wish to acknowledge this land on which the University of Toronto operates. For thousands of years, it has been the traditional land of the Huron-Wendat, the Seneca, and the Mississaugas of the Credit. Today, this meeting place is still the home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to work on this land.

Wellness and Mental Health Support.   As a university student, you may experience a range of health and/or mental health challenges that could result in significant barriers to achieving your personal and academic goals. Please note, the University of Toronto and the Faculty of Applied Science & Engineering offer a wide range of free and confidential services that could assist you during these times.

As a U of T Engineering student, you have a Departmental Undergraduate Advisor who can support you by advising on personal matters that impact your academics. Other resources that you may find helpful are listed on the U of T Engineering Mental Health & Wellness webpage.

If you find yourself feeling distressed and in need of more immediate support resources, consider reaching out to the counsellors at My Student Support Program (MySSP) or visiting U of T Engineering's Urgent Support Talk to Someone Right Now.

Accommodations.   We strive to create equitable and inclusive learning environments for everyone in our community. The University supports accommodations for students with diverse learning needs, which may be associated with (but not limited to) mental health conditions, learning disabilities, ADHD, autism spectrum, mobility impairments, functional/fine motor impairments, concussion or head injury, blindness and low vision, chronic health conditions, addictions, deafness and hearing loss, communication disorders and/or temporary disabilities, such as fractures and severe sprains, or recovery from an operation.

If you have a learning need that requires an accommodation the University of Toronto recommends that students register as soon as possible with Accessibility Services (AS) at the beginning of the academic year by visiting. Without registration, you will not be able to verify your situation with your instructors, and instructors will not be advised about your accommodation needs. AS will assess your situation, develop an accommodation plan with you, and support you in requesting accommodation for your course work from your instructor. Remember that the process of accommodation is private: AS will not share details of your needs or condition with any instructor, and your instructors will not reveal that you are registered with AS.