

Department Of Science

COURSE OUTLINE – Fall 2026

CS3790 (UT): Operating Systems – 3 (3-0-2) 75 Hours for 15 Weeks

Northwestern Polytechnic acknowledges that our campuses are located on Treaty 8 territory, the ancestral and present-day home to many diverse First Nations, Metis, and Inuit people. We are grateful to work, live and learn on the traditional territory of Duncan's First Nation, Horse Lake First Nation and Sturgeon Lake Cree Nation, who are the original caretakers of this land.

We acknowledge the history of this land and we are thankful for the opportunity to walk together in friendship, where we will encourage and promote positive change for present and future generations.

INSTRUCTOR: Franco Carlacchi
OFFICE: C422
OFFICE HOURS: TBA

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CALENDAR DESCRIPTION: You will be introduced to concepts and features commonly found in operating systems. Class discussion will concentrate on traditional operating system topics (processes, memory management, file systems, input/output) as well as distributed operating system topics (communication, synchronization, and distributed file systems). UNIX will be studied as an example of traditional and distributed operating systems.

PREREQUISITE(S)/COREQUISITE: cs1150

REQUIRED TEXT/RESOURCE MATERIALS: There is no required text. However, I will be referring to the following text : *Operating System : Three Easy Pieces* by R. Arpaci-Dusseau and A. Arpaci-Dusseau

Also, material for this course will be made available on myClass.

DELIVERY MODE(S): in-class

LEARNING OUTCOMES:

- students will be able define the different subsystems that make up a modern operating system
- Students will be able to summarize the different algorithms used in the construction of the different subsystems that make up modern operating system
- Students will be able to explain how the different subsystems work.

TRANSFERABILITY:

Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at the Alberta Transfer Guide main page <http://www.transferalberta.alberta.ca>.

**** Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability.**

EVALUATIONS:

Assignments (take home and labs)	30%
Quizzes	10%
Term Exam 1	15%
Term Exam 2	15%
Final	30%

GRADING CRITERIA

Please note that most universities will not accept your course for transfer credit **IF** your grade is less than C-.

Alpha Grade	4-point Equivalent	Percentage Guidelines		Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	95-100		C+	2.3	67-69
A	4.0	85-94		C	2.0	63-66
A-	3.7	80-84		C-	1.7	60-62
B+	3.3	77-79		D+	1.3	55-59
B	3.0	73-76		D	1.0	50-54
B-	2.7	70-72		F	0.0	00-49

COURSE SCHEDULE/TENTATIVE TIMELINE:

Computer System Overview
Operating System Overview
Process Description and control
Threads
Mutual Exclusion and Synchronization
Deadlock and Starvation
Memory Management
Virtual Memory
Uni and multiprocessor scheduling
I/O management and Disk Scheduling
File Management
OS Security

STUDENT RESPONSIBILITIES:

- The Student must pass the theory/concepts portion of the course in order to qualify for a passing grade for the term. In other words, a student must obtain 35 out of a possible 70 points (from final exams/quizzes/term exams) before adding the assignment marks to compute the final grade. **If you cannot achieve the required 50% on the theory/concept portion then regardless of your assignment grades, you cannot pass the course.**
- Student are responsible for adhering to all requirements laid out in the assignments.
- Students must attend all lectures/labs. A student missing more than 20% of classes/labs may be barred from writing the final exam.
- Assignments MUST be submitted on their due date. Late assignments will NOT be accepted and will receive a grade of 0.

STATEMENT ON ACADEMIC MISCONDUCT:

Academic Misconduct will not be tolerated. For a more precise definition of academic misconduct and its consequences, refer to the Student Rights and Responsibilities policy available at <https://www.nwpolytech.ca/about/polytechnic-leadership/policies-directory>.

****Note:** all Academic and Administrative policies are available on the same page.