

DEPARTMENT OF SCIENCE

COURSE OUTLINE – Fall 2026

CS2210 (A2-L1-L2): Introduction to PC Hardware and Systems Configuration – 3 (2-0-2) UT

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:	Matthew Martin	PHONE:	(780) 539-2952
OFFICE:	E401	E-MAIL:	mamartin@nwpolytech.ca
OFFICE HOURS:	Tuesday, 12:00 PM – 2:00 PM		

CALENDAR DESCRIPTION:

This course introduces the fundamentals of PC hardware. Students will open up machines, install devices such as hard drives, I/O cards, video cards as well as memory, CD/DVD ROM drives, install operating systems, explore a variety of different software packages, attach communications equipment and supporting software. Topics include system hardware (e.g. motherboards, processors, storage devices, memory), device drivers, operating systems (e.g. Windows, Linux), troubleshooting and maintenance of LAN (Local Area Network)-based PCs, etc.

PREREQUISITE:

None

RESOURCE MATERIALS:

Jean Andrews, Joy Dark Shelton, and Jill West. *CompTIA A+ Guide to IT Technical Support*. 11th ed. Cengage Learning, 2023. ISBN: 9780357674604.

DELIVERY MODE(S):

- Lectures: A2 Friday 8:30 AM – 10:20 AM A213



- Labs: L1 Thursday 2:30 PM – 4:20 PM G110
L2 Friday 2:30 PM – 4:20 PM G110

LEARNING OUTCOMES:

By the end of this course, students will be able to:

1. Identify and explain the functions, characteristics, and interactions of major PC hardware components, including motherboards, processors, memory, storage devices, power supplies, expansion cards, and input/output devices.
2. Evaluate hardware specifications and compatibility when selecting, replacing, or upgrading PC components, considering factors such as form factor, interfaces, processor and memory support, power requirements, and system requirements.
3. Safely disassemble, assemble, configure, and upgrade personal computer systems using appropriate tools, electrostatic discharge precautions, manufacturer documentation, and accepted hardware installation practices.
4. Configure and verify computer hardware and system firmware using BIOS/UEFI, including boot devices, storage devices, onboard components, processor and memory settings, and other fundamental system configuration options.
5. Install and configure operating systems, device drivers, peripherals, and supporting software, and perform basic post-installation tasks such as storage configuration, system updates, user configuration, and verification of hardware functionality.
6. Explain fundamental LAN and TCP/IP networking concepts and configure a PC for network communication, including network interfaces, IP addressing, common network devices, wired and wireless connectivity, and access to network resources.
7. Apply a systematic troubleshooting and maintenance process to diagnose, resolve, and document common PC hardware, operating system, peripheral, storage, boot, and network-related problems.

TRANSFERABILITY:

Please consult the Alberta Transfer Guide for more information. You may check the transferability of this course at the Alberta Transfer Guide main page

<http://www.transferalberta.alberta.ca>.

** For courses with alpha (letter) grading, a 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:

Lab Assignments	45 %
Quizzes	10 %
Midterm Exam	20 %
Final Exam	25 %
Total	100 %

GRADING CRITERIA:

Please note that most institutions 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:

Last updated Sept 1st, 2026.

Lecture / Lab	Week	Topic / Assignment
Lecture 1	Sept 2 nd – Sept 4 th	Course Introduction
Lab 1		Lab Orientation & System Teardown
Lecture 2	Sept 7 th – Sept 11 th	PC Installation Basics
Lab 2		BIOS/EUFI Introduction & Configuration
Lecture 3	Sept 14 th – Sept 18 th	Motherboards and System Firmware
Lab 3		Processor and Memory Installation
Lecture 4	Sept 21 st – Sept 25 th	Processors and Memory
Lab 4		System Reassembly & Testing
Lecture 5	Sept 28 th – Oct 2 nd	Power Supplies and Cooling
Lab 5		Storage Configuration



Lecture 6	Oct 5 th – Oct 9 th	Storage Technologies and Interfaces
Lab 6		I/O and Hardware Configuration
Lecture 7	Oct 12 th – Oct 16 th	I/O Devices, Peripherals, and Expansion Cards
Lab 7		OS Installation & Configuration
Lecture 8	Oct 19 th – Oct 23 rd	Operating Systems
Lab 8		Network Configuration
Lecture 9	Oct 26 th – Oct 29 th	Networking Fundamentals
	Nov 2 nd – Nov 6 th	Midterm Exam
	Nov 9 th – Nov 13 th	Fall Break
Lab 9		Network Configuration II
Lecture 10	Nov 16 th – Nov 20 th	Network Infrastructure and Connectivity
Lab 10		Software Installation & Configuration
Lecture 11	Nov 23 rd – Nov 27 th	PC Software and Virtualization
Lab 11		Troubleshooting Scenarios Practicum
Lecture 12	Nov 30 th – Dec 4 th	PC Maintenance and Troubleshooting
	Dec 7 th – Dec 11 th	Review / Last Week of Classes
	Dec 12 th – Dec 19 th	Final Exams

STUDENT RESPONSIBILITIES:

1. Students are expected to attend scheduled classes regularly and to arrive prepared to participate in scheduled course activities.
2. Students are responsible for keeping up with course materials, announcements, assigned readings, deadlines, and any work missed due to absence.
3. Coursework and assessments must be completed and submitted by the stated deadline. **Incomplete or late assignments will not normally be accepted.** Extenuating circumstances must be discussed with the instructor as soon as reasonably possible.
4. If a student is unable to attend a scheduled quiz, lab, examination, or other graded activity, they are expected to contact the instructor in advance

whenever possible. Missed assessments or activities may be rescheduled at the instructor's discretion depending on the circumstances.

5. Students are expected to complete their work honestly and in accordance with Northwestern Polytechnic's policies regarding academic integrity and academic misconduct.
6. Students are expected to conduct themselves respectfully and professionally when interacting with classmates, instructors, and other members of the Polytechnic.
7. Students are responsible for seeking clarification or assistance when course requirements, concepts, assignments, or expectations are unclear.
8. Many concepts introduced during lectures are reinforced through hands-on laboratory activities. Laboratory work constitutes a significant portion of the course grade and provides practical experience that cannot be fully replicated outside the scheduled lab environment. **Regular attendance and participation in laboratory sessions is therefore required for success in this course.**
9. Laboratory assignments will normally be completed in groups of two to three students. All group members are expected to participate meaningfully and contribute fairly to the completion of the assigned work. Work should not be disproportionately completed by one member of the group, and submissions that do not reflect equitable participation may not be accepted.
10. Students are responsible for the equipment, tools, components, and supplies provided during laboratory activities and are expected to use them appropriately. **At the conclusion of each lab assignment, all tools, supplies, components, cables, and other laboratory equipment must be returned to their designated storage locations and the workspace must be left clean and orderly.** Lab assignments will not be accepted for submission until the group's work area has been properly cleaned and all equipment and materials have been accounted for and stored correctly.

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 <https://www.nwpolytech.ca/about/polytechnic-leadership/policies-directory>.

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

CS2210: Introduction to PC Hardware and Systems Configuration is being offered in lieu of **CT1000: Introduction to PC Hardware**. Students requiring CT1000 will receive credit for that course upon successful completion of CS2210.