NORTHWESTERN POLYTECHNIC

DEPARTMENT Of Science

COURSE OUTLINE – Fall 2024

CS1010 (A2): Introduction to Computing – 3 (3-0-3)

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:	Dr. Mohamed Elgamal	PHONE:	780-539-2976
OFFICE:	C306	E-MAIL:	melgamal@nwpolytech.ca
OFFICE HOURS:	TWR 1:00-2:00 (by appointment)		

CALENDAR DESCRIPTION:

This course provides an overview of computing science concepts for students with little or no programming background. Topics include representation of data, machine architecture, operating system concepts, properties of algorithms and computational problems, syntax of a high-level procedural programming language, basic data types and control structures. Students do introductory programming in this course.

PREREQUISITE(S)/COREQUISITE:

None

REQUIRED TEXT/RESOURCE MATERIALS:

- Invitation to Computer Science, 8th ed., G. Michael Schneider and Judith L. Gersting. ISBN: 978-1-337-56191-4.
- Introduction to Programming Using Python, Y.Daniel Liang. ISBN: 978-0132747189
- Other resources will also be available on BrightSpace.

NORTHWESTERN POLYTECHNIC

DELIVERY MODE(S): In-Person, On-Campus

This course includes 3-hours of lecture per week and a 3-hour lab per week.

Lectures:	D308	TR	10:00 – 11:20
Lab: L1	E306	W	14:30 – 17:20
Lab: L2	E306	R	14:30 – 17:20

LEARNING OUTCOMES:

Be able to analyze and design algorithms. Have experience writing programs in high level languages. Be introduced to the systems software, computer architecture and computer circuits that comprise computer systems.

TRANSFERABILITY:

UA, UC, UL, AU, KUC, GMU.

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:

Your final grade will be determined in the following manner:

Lab Assignments	20%
Midterm Test I	15%
Midterm Test II	15%
Quizzes	25%
Final Exam	25%

NORTHWESTERN POLYTECHNIC

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

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:

Week 1	Introduction, Outline, Discussion and Expectations
Week 2	The Algorithmic Foundations of Computer Science
Week 3	Algorithm Discovery and Design
Week 4	The Efficiency of Algorithms
Week 5	Binary Numbers, Boolean Logic and Gates
Week 6	Computer System Organization
Week 7	Computer System Organization (Cont.)
Week 8	Midterm I, Introduction to Programming Language using Python
Week 9	Variables, Data types and Expressions
Week 10	Mathematical Functions and Strings
Week 11	Fall Break, No classes
Week 12	Conditional Statements, Loops
Week 13	Functions
Week 14	Midterm II

NORTHWESTERN POLYTECHNIC

STUDENT RESPONSIBILITIES:

Students are responsible for all lecture material, labs and readings. If the final is missed due to illness it will be deferred. A doctor's note or a phone message or email will be required in both cases.

It is the student's responsibility to adhere to ALL requirements of the assignments. Students are expected to arrive on time for both class and lab. The students should not leave the lab without signing up in the attendance sheet. If students are consistently late, they may be barred from attending future classes.

Assignments MUST be submitted on their due date by the end of the labs. 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/administration/policies/index.html.

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

Additional Information:

Some of the quizzes are programming tasks to measure the students' programming skills and will be during the lab or class time.