NORTHWESTERN POLYTECHNIC

Department Of Science

COURSE OUTLINE – Fall 2022

CS1010: Introduction to Computing – 3 (3-0-3) 90 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: Dr. Mohamed Elgamal
PHONE: 780-539-2976
OFFICE: C-427
E-MAIL: melgamal@nwpolytech.ca
OFFICE HOURS: Wed. 13:30-14:20 or 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

DELIVERY MODE: In-Person, On-Campus
This course includes 3-hours of lecture per week and a 3-hour lab per week

Lectures:	J228	MW	14:30 - 15:50
Labs: L1	G111	R	8:30 – 11:20
Labs: L2	G111	R	14:30 – 17:20

COURSE OBJECTIVES:

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.

LEARNING OUTCOMES:

Students will be able to analyze simple problems, design algorithms and implement solutions in a high level language. They will have a basic knowledge of computer circuits, computer architecture, and systems software.

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.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%**
Quizzes	**20%**
Midterm Exam	**25%**
Final Exam	**35%**

GRADING CRITERIA: (The following criteria may be changed to suite the particular course/instructor)

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	90-100	C+	2.3	67-69
A	4.0	85-89	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:

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

STATEMENT ON PLAGIARISM AND CHEATING:

Cheating and plagiarism will not be tolerated and there will be penalties. For a more precise definition of plagiarism and its consequences, refer to the Student Conduct section of the Northwestern Polytechnic Calendar at https://www.nwpolytech.ca/programs/calendar/ or the Student Rights and Responsibilities policy which can be found at https://www.nwpolytech.ca/about/administration/policies/index.html.

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