



SCIENCE DEPARTMENT

COURSE OUTLINE – FALL 2021

CS 1010: Introduction to Computing-3 (3-0-3) 90 Hours for 15 Weeks

Grande Prairie Regional College respectfully acknowledges that we are located on Treaty 8 territory, the traditional homeland and gathering place for many diverse Indigenous peoples. We are honored to be on the ancestral lands of the Cree, Dene/Beaver and Métis, whose histories, languages, and cultures continue to influence our vibrant community. We are grateful to have the opportunity to work, learn, and live on this land.

INSTRUCTOR: Dr. Ubaid Abbasi **PHONE:** 780-539-2976
OFFICE: C-427 **E-MAIL:** UAbbasi@gprc.ab.ca
OFFICE HOURS: Monday 2:20-3:20 PM or appointment by email

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(S):

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

Lectures: J228 Monday-Wednesday 4:00 - 5:20 PM
Labs: J101 Wednesday 8:30 – 11:20AM

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.

***Warning:** Although we strive to make the transferability information in this document up-to-date and accurate, **the student has the final responsibility for ensuring the transferability of this course to Alberta Colleges and Universities.** Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at Alberta Transfer Guide main page <http://www.transferalberta.ca> or, if you do not want to navigate through few links, at <http://alis.alberta.ca/ps/tsp/ta/tbi/onlinerearch.html?SearchMode=S&step=2>

**** 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	Computer System Organization
7	Computer System Organization (Cont)
8	Introduction to Programming Language using Python
9	Midterm
10	Variables, Data types and Expressions
11	Mathematical Functions and Strings
12	Iterative Statements
13	Loops
14	Loops (Cont)
15	Functions

STUDENT RESPONSIBILITIES:

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 College Calendar at <http://www.gprc.ab.ca/programs/calendar/> or the College Policy on Student Misconduct: Plagiarism and Cheating at <https://www.gprc.ab.ca/about/administration/policies>

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