Course Outline

School:	Eng. Tech. & Applied Science
Department:	Information and Communication Engineering Technology (ICET)
Course Title:	Programming 1
Course Code:	COMP 100
Course Hours/Credits:	56
Prerequisites:	N/A
Co-requisites:	N/A
Eligible for Prior Learning, Assessment and Recognition:	Yes
Originated by:	Programming Languages Group
Creation Date:	Summer 2011
Revised by:	ILIA NIKA
Revision Date:	Winter 2015
Current Semester:	Winter 2018
Approved by:	ppesikan c/o

Chairperson/Dean

Acknowledgement of Traditional Lands

Centennial is proud to be a part of a rich history of education in this province and in this city. We acknowledge that we are on the treaty lands and territory of the Mississaugas of the Credit First Nation and pay tribute to their legacy and the legacy of all First Peoples of Canada, as we strengthen ties with the communities we serve and build the future through learning and through our graduates. Today the traditional meeting place of Toronto is still home to many Indigenous People from across Turtle Island and we are grateful to have the opportunity to work in the communities that have grown in the treaty lands of the Mississaugas. We acknowledge that we are all treaty people and accept our responsibility to honor all our relations.

Course Description

Programming 1 is an introductory course in programming. It seeks to develop good coding practices and program design through theory and hands-on exercises. It includes programming concepts, logic and program structures. It lays the foundations for the design and development of business applications.

Program Outcomes

Successful completion of this and other courses in the program culminates in the achievement of the Vocational Learning Outcomes (program outcomes) set by the Ministry of Advanced Education and Skills Development in the Program Standard. The VLOs express the learning a student must reliably demonstrate before graduation. To ensure a meaningful learning experience and to better understand how this course and program prepare graduates for success, students are encouraged to review the Program Standard by visiting http://www.tcu.gov.on.ca/pepg/audiences/colleges/progstan/. For apprenticeship-based programs, visit http://www.collegeoftrades.ca/training-standards.

Course Learning Outcomes

The student will reliably demonstrate the ability to:

1. Explain the need for and use basic program design tools.
2. Justify the various data types for program variables.
3. Understand and apply program control structures.
4. Construct nested selection and looping structures.
5. Understand and apply basic problem solving tool.
6. Pass data between program methods.
7. Develop methods that use arrays.
8. Build and use simple C# classes.
9. Design, code and test a program in a language like C# .NET to solve a prescribed business problem.

Essential Employability Skills (EES)

The student will reliably demonstrate the ability to*:

1. Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.
4. Apply a systematic approach to solve problems.
5. Use a variety of thinking skills to anticipate and solve problems.

7. Analyze, evaluate, and apply relevant information from a variety of sources.
8. Show respect for diverse opinions, values belief systems, and contributions of others.
9. Interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals.
10. Manage the use of time and other resources to complete projects.
11. Take responsibility for one's own actions, decisions, and consequences.

**There are 11 Essential Employability Skills outcomes as per the Ministry Program Standard. Of these 11 outcomes, the following will be assessed in this course.*

Global Citizenship and Equity (GC&E) Outcomes

N/A

Methods of Instruction

Professor led discussion, directed reading and hands on labs

Text and other Instructional/Learning Materials

Text Book(s):

Microsoft® Visual C# 2015: An Introduction to Object-Oriented Programming, 6th Edition
Joyce Farrell, ISBN-10: 1285860233 | ISBN-13: 9781285860237, 864 Pages, published by Cengage Learning, 2016.

Classroom and Equipment Requirements

Computers with access to college storage

Evaluation Scheme

- Assignments: There will be a total of six assignments worth 5 marks each (Total 30). The assignments will be evaluated in weeks 2, 4, 6, 8, 10 and 12
- Test 1: Test will take place in week 6 and will cover material taught between weeks 1 and 5.
- Test 2: Test 2 will take place in week 9 and will cover material taught up to week 8.
- Test 3: Test 3 will take place in week 12 and will cover material taught up to week 11.
- Quizzes: There will be about 7 quizzes worth a total of 5 marks that will be done upon the completion of each topic. There will also be a number of lab completion exercises worth a total of 5 marks.

Evaluation Name	CLO(s)	EES Outcome(s)	GCE Outcome(s)	Weight/100
Assignments	1, 2, 4, 5, 7, 8	1, 5, 8, 9, 10		30
Test 1	1, 2, 3, 5, 6, 7	4, 7, 8		20
Test 2	5, 6, 7, 8, 9	7, 9, 10, 11		20
Test 3	4, 6, 8, 9	4, 7, 9, 11		20
Quizzes	1, 2, 5, 6	4, 5, 7		10
Total				100%

If students are unable to write a test they should immediately contact their professor or program Chair for advice. In exceptional and well documented circumstances (e.g. unforeseen family problems, serious illness, or death of a close family member), students may be able to write a make-up test.

All submitted work may be reviewed for authenticity and originality utilizing Turnitin®. Students who do not wish to have their work submitted to Turnitin® must, by the end of the second week of class, communicate this in writing to the instructor and make mutually agreeable alternate arrangements.

When writing tests, students must be able to produce official College photo identification or they may be refused the right to take the test or test results will be void.

Student Accommodation

Students with permanent or temporary accommodations who require academic accommodations are encouraged to register with the Centre for Students with Disabilities (CSD) located at Ashtonbee (L1-04), Progress (C1-03), Morningside (Rm 190), and Story Arts Campus (Rm 284). Documentation outlining the functional limitations of a disability is required; however, interim accommodations pending receipt of documentation may be possible. This service is free and confidential. For more information, please email csd@centennialcollege.ca.

Use of Dictionaries

- Dictionaries may be used in tests and examinations, or in portions of tests and examinations, as long as they are non-electronic (not capable of storing information) and hard copy (reviewed by the invigilator to ensure notes are not incorporated that would affect test or examination integrity).

Program or School Policies

N/A

Course Policies

N/A

College Policies

Students should familiarize themselves with all College Policies that cover academic matters and student conduct.

All students and employees have the right to study and work in an environment that is free from discrimination and harassment and promotes respect and equity. Centennial policies ensure all incidents of harassment, discrimination, bullying and violence will be addressed and responded to accordingly.

Academic honesty is integral to the learning process and a necessary ingredient of academic integrity. Academic dishonesty includes cheating, plagiarism, and impersonation. All of these occur when the work of others is presented by a student as their own and/or without citing sources of information. Breaches of academic honesty may result in a failing grade on the assignment/course, suspension or expulsion from the college.

For more information on these and other policies, please visit www.centennialcollege.ca/about-centennial/college-overview/college-policies.

Students enrolled in a joint or collaborative program are subject to the partner institution's academic policies.

PLAR Process

This course is eligible for Prior Learning Assessment and Recognition (PLAR). PLAR is a process by which course credit may be granted for past learning acquired through work or other life experiences. The PLAR process involves completing an assessment (portfolio, test, assignment, etc.) that reliably demonstrates achievement of the course learning outcomes. Contact the academic school to obtain information on the PLAR process and the required assessment.

Semester:	Fall 2017	Professor Name:	Narendra Pershad
Section Code:	Combined	Contact Information:	Rm A2-30
Meeting Time & Location:	Various		

Topical Outline (subject to change):

Week	Topics	Readings/Materials	Weekly Learning Outcome(s)	Instructional Strategies	Evaluation Name	Evaluation Date
1	Programming Concepts	Chapter 1	Identify the output, input and processing items from a problem specification. Learn about programming. Explore programming concepts. Learn about algorithms.	Use three-column IPO Chart to reinforce program creation	Assignment 1	
2	Programming Concepts	Chapter 1	Learn about the C# programming language. Write a C# program that produces output and accept user input. Learn how to select identifiers to use within your programs. Add comments to a C# program. Write and compile a C# program using Visual Studio	Use a two-column IPO Chart to reinforce program creation		
3	Using Data	Chapter 2	Learn about declaring variables. Display variable values. Learn about the integral data types. Learn about floating-point data types. Use arithmetic operators	Lecture Demonstration Lab Session	Assignment 2	
4	Using Data	Chapter 2	Learn about the bool data type. Learn about numeric type conversion.	Lecture Demonstration Lab Session		

Week	Topics	Readings/Materials	Weekly Learning Outcome(s)	Instructional Strategies	Evaluation Name	Evaluation Date
			Learn about the char data type. Learn about the string data type. Define named constants.			
5	Making Decisions	Chapter 4	Understand logic-planning tools such as Pseudocode and Flowchart. Learn how to make decisions using the if statement. Learn how to make decisions using the if-else statement.	Lecture Demonstration Lab Session	Test 1	Test 1 in the last class of Week 5
6	Making Decisions	Chapter 4	Use compound expressions in if statements. Make decisions using the switch statement. Use the conditional operator. Use all the relational operators. Learn to avoid common errors when making decisions. Use nested conditionals and implement more complex logic.	Lecture Demonstration Lab Session	Assignment 3	
7	Looping	Chapter 5	Learn how to create loops using the do, while and for statements	Lecture Demonstration Lab Session		
8	Looping	Chapter 5	Use nested loops Accumulate totals Understand how to improve loop performance	Lecture Demonstration Lab Session	Assignment 4	
9	Looping	Chapter 5	Using nested conditionals with nested looping statements	Lecture Demonstration Lab Session	Test 2	Test 2 in the last class of Week 9
10	Arrays	Chapter 6	Understand that arrays are multi value variables. Declare an array and assign values to array elements.	Lecture Demonstration Lab Session	Assignment 5	

Week	Topics	Readings/Materials	Weekly Learning Outcome(s)	Instructional Strategies	Evaluation Name	Evaluation Date
			elements. Use subscripts to access array elements. Use the Length property. Use foreach to control array access. Perform operations on an array such as searching, summing, filtering. Use the BinarySearch(), Sort() and Reverse() methods. Under the usage of multidimensional and jagged arrays			
11	Methods	Chapter 7	Learn about methods and implementation hiding. Understand method header and body. Write methods with no parameters and no return value.	Lecture Demonstration Lab Session		
12	Methods	Chapter 7	Write methods that requires argument and may or may not return values. Use the ref and out keyword to decorate parameters. Method that works with arrays.	Lecture Demonstration Lab Session	Assignment 6	
13	Method	Chapter 8	Use built-in methods: Maths - Sqrt, Sin etc. String - ToUpper, ToLower, Split, ToCharArray etc. Random - Next, NextDouble etc.	Lecture Demonstration Lab Session	Test 3	Test 3 in the last class of Week 13