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:	Fall 2014
Current Semester:	Fall 2015
Approved by:	*ppesikan c/o*

_____
Chairperson/Dean

Students are expected to review and understand all areas of the course outline.

Retain this course outline for future transfer credit applications. A fee may be charged for additional copies.

This course outline is available in alternative formats upon request.

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 Training, Colleges and Universities 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):

Farrell, Joyce. 2013. Microsoft® Visual C#® 2012: An Introduction to Object Oriented Programming (5th Edition.): Course Technology, Cengage Learning.

ISBN 10: 1285096339

ISBN 13: 978-1285096339

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

It is College Policy to provide accommodation based on grounds defined in the Ontario Human Rights Code. Accommodation may include modifications to standard practices. Students with disabilities who require academic accommodations must register with the Centre for Students with Disabilities. Students requiring accommodation based on other human rights grounds should talk with their professors as early as possible. Please see the Student Accommodation Policy.

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.

This course outline and its associated weekly topical(s) may not be reproduced, in whole or in part, without the prior permission of Centennial College.

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 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 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 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 Learn about the char data type Learn about the string data type Define named constants Accept console input	Lecture Demonstration Lab Session		
5	Making Decisions	Chapter 4	Understand logic-planning tools and decision making: Pseudocode 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	Lecture Demonstration Lab Session	Assignment 3	
7	Looping	Chapter 5	Learn how to create loops using the do, while and for statements	Lecture Demonstration		

Week	Topics	Readings/Materials	Weekly Learning Outcome(s)	Instructional Strategies	Evaluation Name	Evaluation Date
				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	Declare an array and assign values to array elements Use subscripts to access array elements Use the Length property Use foreach to control array access Search an array using a for and while loop Search an array to find an exact match Search an array to find a range match Use the BinarySearch(), Sort() and Reverse() methods Use multidimensional arrays	Lecture Demonstration Lab Session	Assignment 5	
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 require a single argument Write methods that require multiple arguments	Lecture Demonstration Lab Session	Test 3	Test 3 in the last class of Week 14
13	Method	Chapter 8	Pass an array to a method Use reference parameters, output parameters, and parameter arrays with methods Using optional parameters	Lecture Demonstration Lab Session	Assignment 6	
14	Method	Chapter 8	Will learn about the following methods ToLower(), ToUpper(), ToCharArray(), Split() pertaining to strings and the Next() method of the Random class	Lecture Demonstration Lab Session		