



CSTP 1205: Programming in C++

EFFECTIVE DATE

September 2019

DEPARTMENT

Computer Systems Tech Diploma

DESCRIPTION

This is an intense hands-on course on the most popular system and app development language: C++. Students (equipped with the basics of programming from CSTP 1105) go on to cover the basics of C++ and its powerful features. Topics include classes, object life cycle, memory management and smart pointers, program execution life-cycle, an introduction to the Standard Template Library (STL), the basics of exception handling, and finally the basics of threads and processes in C++. The main goal of this course is for students to become fully familiar with the landscape of programming with C++ and to be comfortable using its common and modern features as well as to have the confidence to debug, optimize, and restructure existing code in a general application development context.

CREDITS

4.0

YEAR OF STUDY

1st Year Post-secondary

PREREQUISITES

CSTP 1105 Introduction to Programming

COREQUISITES

None

COURSE LEARNING OUTCOMES

Upon successful completion of this course, students will be able to:

- Design reusable classes through inheritance and interfaces
- Design extensible classes through polymorphism
- Troubleshoot a defective program and debug it
- Develop programs using test driven development techniques
- Perform basic I/O(Input-Output) from/to a buffer or a file

- Design robust C++ programs using appropriate exception handling
- Use common algorithms and containers in C++ Standard Template Library
- Create programs that use multi-threading efficiently
- Use template data types

PRIOR LEARNING ASSESSMENT & RECOGNITION (PLAR)

None

HOURS

Lecture: 40

Lab: 40

INSTRUCTIONAL STRATEGIES

Instructional strategies include classroom lectures, demonstrations, group discussions, computer lab and hands-on practical work.

GRADING SYSTEM

Letter Grade (A-F)

PASSING GRADE

C

EVALUATION PLAN

Type	Percentage	Assessment activity
Assignments	50	One assignment per week, except the 2 weeks of exams
Midterm Exam	20	
Final Exam	25	
Participation	5	

COURSE TOPICS

- Inheritance and interfaces
- Polymorphism
- Memory Management
- Defective program troubleshooting

- Test driven development techniques
- Exception Handling
- Standard Template Library
- Data storage and retrieval from files
- Multithreading programs
- Smart Pointers

LEARNING RESOURCES

None

Notes:

- Course contents and descriptions, offerings and schedules are subject to change without notice.
- Students are required to follow all College policies including ones that govern their educational experience at VCC. Policies are available on the VCC website at:
<https://www.vcc.ca/about/governance--policies/policies/>.
- To find out how this course transfers, visit the BC Transfer Guide at <https://www.bctransferguide.ca>.

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Downtown campus

250 West Pender Street
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