BOSTON UNIVERSITY
Metropolitan College
MET CS 231, Programming with C++
Course Syllabus

Fall Semester, 2018   Charles River Campus, CGS 515
Monday Evenings, 9/10 – 12/17 <u>except Tuesday 10/9</u>, 6:00PM – 8:45PM   Email: maslanka@bu.edu
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Course Objective:
To gain an understanding of the fundamental usages of the C++ language, the usage of the Object-Oriented paradigm, and of the "class" syntax of the generalized Object-Oriented programming contained in the C++ language. Upon completion of this course the student is expected to be able to use the C++ language to design and write Object-Oriented computer programs to solve a selection of quantifiable problems.

Preliminary Expectations:
All students have successfully completed the equivalent of MET CS 201, Introductory Computer Science. Or, you may be professionally engaged in computer programming either currently or recently. Students are expected to do their homework exercises on a system which supports an ANSI C++ with a related Interactive Development Environment (IDE), i.e. Windows MSVS, MacOS or a UNIX or linux-based system.

Gradables:
Five Homework Problems for 10% each, one Midterm Exam 25% and one Final Exam 25%. The Midterm will be Take-home. The Final will be given in class on the date specified in the attached course calendar. The problem statements for the assignments will be provided by the Professor. <u>Please note: All rules and regulations of Boston University Metropolitan College regarding academic integrity apply to the conduct of this course.</u> Please take time to review the Student Academic Conduct Code which can be found at the following URL:

http://www.bu.edu/met/metropolitan_college_people/student/resources/conduct/code.html.

Textbook:
C++ How to Program, 10/E by Deitel and Deitel, Pearson, 2017, ISBN-13: 978-0134448237. This is an excellent reference book for your programming library.
Reference:
Introduction to Programming in C++, by Maslanka, publ. Kendall Hunt, 2009, ISBN: 978-0-7575-6536-6

Website:
The Blackboard Website for the course is under the Boston University website learn.bu.edu. All students are expected to enroll in the website for the course and to read the materials regularly which I shall place there. You will need a BU computer id and password to access it.

Dr. Maslanka is a professional writer of computer language compilers and run-time systems. He worked at the former Digital Equipment Corporation from 1975 to 1984 in their Marlboro, MA facility. He has been most recently employed by Hewlett Packard Company/Compaq Computer Corporation in their Nashua NH facility, from 1991 to 2002 when he took retirement. Also, he has taught part-time in the BU MET College Computer Science Department since September, 1973.

BU MET CS 231   **Course Calendar**   **Fall Semester, 2018**

Dates	Topics	Readings in Textbook
Sep 10	Course Overview Usage of fundamental Data Types – bool, int, double, char C++ Primary Inputs and Outputs, including Testing Usage of MSVS Interactive Development Environment (IDE) **Homework 1 available**	Ch 1 - 2
Sep 17	Control of Flow and Operator Precedence C++ File IO -- Text File inputs and outputs **Homework 1 due in email**	Ch 4 - 5 Ch 14 - 15
Sep 24	Functions including Overloading and Recursion; Template functions; **Homework 2 available**	Ch 6.16 - 6.22
Oct 1	Arrays and Strings	Ch 7 - 7.5
Oct 9(**Tues**)	Use of referencing (&) and dereferencing data types (*) **Homework 2 due in email** (Mon 10/8 no class, Columbus Day Holiday)	Ch 8,
Oct 15	Usage of Dynamic Memory (Heap) **new** and **delete** operators **Homework 3 available**	Ch 10.9
Oct 22	**C++ class** - basic concepts and syntax Constructors and Destructors **Homework 3 due in email**	Ch 3 - 3.5
Oct 29	Creation and usage of derived data types; Data Abstraction **C++** methods	Ch 9 - 9.
Nov 5	**C++ class** - Overloading of Methods and Operators **Take-Home Midterm Exam available**	Ch 10 -10.7
Nov 12	Program Abstraction – usage of .h and .cpp files Preprocessor **Take-Home Midterm Exam due in email**	Ch 3.6 - 3.8 App E
Nov 19	Exception Handling friend functions and friend classes **Homework 4 available**	Ch 7-7.5, 7.10, Ch 9.12, 10.2
Nov 26	template classes Standard string Library, Standard Template Library (STL) **Homework 4 due in email – C++ class required**	Ch11 Ch 15, Ch 21
Dec 3	Concept and Usage of Inheritance in C++ **Homework 5 available**	Ch 12 – 12.5
Dec 10	Polymorphism/Delegation in C++ Abstract Data Types and Virtual Methods Review for Final Exam **Homework 5 due in email – C++ class required**	Ch 12.6-12.7
Dec 17	**Final Exam 6:15 - 8:15 PM.** All course work must be completed by this evening. My course grades must be submitted to the Registrar within 72 hours of the termination of the Final Exam.	