



CPA – C++ Certified Associate Programmer

Exam Syllabus (ver. 1.0, 2012)

www.cppinstitute.org
www.pearsonvue.com/cpp/

Absolute basics

- machine and high-level programming languages, compilation process,
- obtaining the machine code: compilation process,
- writing simple programs,
- variables,
- integers: values, literals, operators,
- characters: values, literals, operators,
- dealing with streams and basic input/output operations.

Flow control and more data types

- how to control the flow of the program
- floating point types: values, literals, operators,
- more integer types: values and literals,
- loops and controlling the loop execution,
- logic, bitwise and arithmetic operators.

Functions

- functions,
- declaring and invoking functions,
- side effects,
- different methods of passing parameters and their purpose,
- default parameters,
- inline functions,
- overloaded functions.

Accessing data and dealing with exceptions

- converting values of different types,
- strings: declarations, initializations, assignments,
- string as an example of object: introducing methods and properties,
- namespaces: using and declaring,
- dealing with exceptions.



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Fundamentals of the object-oriented approach

- class,
- objects,
- class components,
- constructors,
- referring to objects,
- static members,
- classes and their friends,
- defining and overloading operators.

Class hierarchy

- base class, superclass, subclass,
- inheritance: how it works,
- types of inheritance,
- inheriting different class components,
- multiple inheritance.

More on classes

- polymorphism: the notion and the purpose,
- virtual methods: declaration and usage,
- inheriting virtual methods,
- abstraction and abstract classes.

Exceptions - dealing with expected and unexpected problems

- what is an exception,
- catching and throwing exceptions,
- different classes and hierarchy of exceptions,
- defining your own exceptions.