

UNIVERSITÀ DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Advanced topics in C++

86R-XXXVI-ATC

Aims

Contents

Detailed program

- Introduction to compiled languages
- The C++ compiler GNU g++ Compilation stages The tokenizer The parser The pre-processor The compiler The linker The loader
 Pointers & References
 Stack and heap (memory management)
 The concept of "scope"(memory management)
 Classes Encapsulation Polymorphism
- Polymorphism Inheritance Multiple inheritance Friendship Difference between "class" and "object" Garbage collection(memory management) Ownership

Constuctors/destructors Explicit constructors Copy constructor(memory management) Forward declarations Constness Static variables • Exception handling • Casting (static, dynamic) • Operator overloading • The singleton pattern • Namespace • Generic programming Templating Standard template library (STL) Vectors MapsoLists Queues Iterators Algorithms • Advanced features Plugins Qt as an example of framework with IDE and asynchronus programming Root.

Prerequisites

Teaching form

2 CFU, 24 hours.

Textbook and teaching resource

Semester

February 16, 23, 25 2021 h. 15-17;

March 2, 4, 9, 11, 16, 18, 23, 25, 30 2021 h. 15-17.

Assessment method

Office hours