Syllabus

- This is a fast-paced introductory course to the C++ programming language.

- It is intended for those with little or no programming background, though prior programming experience will make it easier.

- The course covers C++ basic constructs (loops, variables, operators, and functions), built-in libraries, data structures, templates, object oriented programming techniques, design patterns.

- It develops logical thinking aimed at designing algorithms to solve specific problems.

- [The course will ultimately provide with an overview of the components of a modern risk management system.]

Lecturer: Fabio Cannizzo

- Education
  - An engineer
  - A finance specialist
- Career
  - ExxonMobil
  - Enron
  - BP
  - Calyon
  - Merrill Lynch
  - Standard Chartered

Goals

- The main goals of the course are:
  - To be able to understand and use the basic programming constructs of C/C++
  - To manipulate various C/C++ datatypes, such as arrays, strings, and pointers
  - To debug programs, to isolate and fix common errors in C++ programs
  - To manage memory correctly
  - To manage exceptions
  - To use templates and the standard template library
  - To use object-oriented approaches to software problems in C++
  - The ability to solve problems writing small-scale C++ programs using the above skills
  - [Understand the components and architecture of a risk management system.]
- Note: GUI applications will not be covered

Material

- Slides (on IVLE)
- Internet resources (mentioned on slides)
- No book strictly followed. However many topics are well covered on: Y. Daniel Liang: Introduction to Programming with C++, 3rd Edition

Teaching Mode

- During classes simple practice exercises will be assigned.
- It is recommended for student to have available during lectures a laptop with Windows OS and a working version of Visual Studio (freely downloadable from Microsoft web site).
- For those who do not possess a Windows laptop, there are alternatives, which differ depending with the OS. These can be used but the lecturer can NOT provide support. Some of these are online toolchains, but it is quite clumsy to work with them, e.g.
  - http://www.tutorialspoint.com/compile_cpp11_online.php
  - https://ideone.com
  - http://cpp.sh/

Grading Policy

- Project
  - 40% of final mark
- Exam:
  - 60% of final mark
  - on paper
  - open books
  - possible type of questions:
    - This code is supposed to do … : what's wrong with it?
    - What does this code do?
    - Multiple choice questions
    - Implement a piece of code which does …