

Course name: 103 “C++ Programming Language” [3 ECTS]

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Description: Revision of C++ for programmers. This course takes place in parallel to the programming course offered to all non-programmers and is intended only for programmers. Indeed, the variation in programming level between programmers and the other specialities is so significant that this separation benefits the entire year. This course is based on a course in C++ given at Stanford and covers language widely, with smaller focuses on optimization concepts. Since students' level in C++ varies considerably, student pairs are intended to be equal and thereby encourage the sharing of knowledge between students. The course is interspersed with MCQ to assess theoretical learning, and practical work is carried out throughout this week through the development of an ASCII game on the Windows console.

Prerequisites: Knowledge of programming basics: types, data structures, tests, loops. Ability to manipulate inheritance and polymorphism, and certain simple design patterns.

Learning: To globally predict the impact of the code on implementation and the memory footprint of the program and thus be able to write a more optimized code. Understanding the advanced mechanisms offered by the STL and drawing inspiration from this to be able to offer a suitable architecture both in terms of manipulability and optimisation.

Assessment methods:

Session 1

- TP Game Console to be delivered in a lesson and MCQ during the lesson

Session 2

- Same Game Console delivery as for session 1 at the end of semester 2