

C# Programming



SCHOOL

Polytech Graduate School of Engineering



CAMPUS

Belle-Beille



LEVEL

3rd year Bachelor's degree



OPEN TO EXCHANGE STUDENTS

Yes



SEMESTER

Spring (S2)

- > **Degree course:** Graduate School of Engineering - Automation and Computer Engineering
- > **Teaching unit:** UE 6.4 Génie Informatique
- > **Course language:** English
- > **Duration (hours):** 36
- > **ECTS:** 2
- > **Teacher(s):** Bertrand Cottenceau

> Assessment:

- Continuous assessment
- Final exam

> Teaching methods:

- | | | | |
|--|----|-------|-------------------------------------|
| <input checked="" type="checkbox"/> Lecture course | 4 | hours | <input type="checkbox"/> Case study |
| <input type="checkbox"/> Tutorial course | | hours | <input type="checkbox"/> Project |
| <input checked="" type="checkbox"/> Practical work | 32 | hours | |

COURSE DESCRIPTION

This lecture aims at introducing the object oriented paradigm with the C# language.

First, we give some simple examples of classes, and then we introduce the inheritance in C#.

The class diagram of UML is used to give a graphical description of relations between classes. Several concepts have to be tackled along the lecture such as interfaces, abstract classes, virtual methods and events. Moreover, some basic classes of the .NET framework are presented (string, List<T>, and LinkedList<T>).

- The examples are first given for console applications and then for Windows Form applications.
- The class keyword
- Value type vs reference type in .NET
- Constructors, Properties
- composition in C#
- inheritance in C#
- virtual methods
- Interfaces, abstract classes
- Delegates Events
- Windows Form Applications

OBJECTIVES

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PREREQUISITES

procedural programming (C language)

SELECTIVE BIBLIOGRAPHY

C# in a nutshell (Joseph Albahari, Ben Albahari)