

Object-oriented design and programming



Component

École Nationale
Supérieure
d'Électrotechnique
d'Électronique
d'Informatique
d'Hydraulique
et des
Télécommunications

In brief

- > **Amety's Code:** N7EE01A
- > **Open to exchange students:** Yes

Presentation

Objectives

The objective of the course is to provide an introduction to the principles of object-oriented design and programming. OO design is illustrated using the UML model, and programming focuses on the C++ language.

Description

The course includes a number of sections on modeling a computer system in the form of communicating objects.

We begin by addressing the basic concepts of this modeling (uniqueness, abstraction, classification, and reuse). After a quick review of the characteristics of imperative programming languages, we introduce the algorithmic characteristics of C++, before developing in detail the concepts of classification, dynamic object management, input/output processing, and templates.

A design office asks students to analyze a set of specifications, model the solution (UML, class diagram), and develop it in C++, including validation of the result. This design office is accompanied by a development report and delivery of the developed code.

Pre-requisites

A good knowledge of algorithms and C programming is absolutely necessary.