VHDL

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

In brief

- **Ametys Code:** N7EE08A
- **Open to exchange students:** Yes

Presentation

Objectives

- Understand the fundamentals of digital design and the VHDL language.
- Model simple combinational and sequential circuits using VHDL.
- Simulate and synthesize circuits using EDA tools (e.g. Vivado).
- Learn best practices for VHDL coding and documentation.

Description

This course introduces students to digital circuit design using VHDL (VHSIC Hardware Description Language). It covers basic syntax, circuit modeling, simulation, and synthesis for FPGAs. Students will learn to describe combinational circuits (logic gates, multiplexers, decoders) and sequential circuits (flip-flops, registers, state machines), and use EDA tools to validate their designs.

Pre-requisites

- Basic knowledge of digital electronics (Boolean algebra, logic gates, flip-flops).

- Familiarity with a programming language (C, Python, etc.) is helpful but not required.