

## Programmable Logic

The FPGA and VHDL courses covers the design and implementation of digital circuits using FPGA devices and the VHDL hardware description language.

These courses are typically targeted at professionals in the field of electronic engineering, and are designed to provide them with the skills and knowledge they need to design and implement complex digital systems using FPGAs and VHDL.

In an FPGA course, participants will learn about the architecture and features of FPGA devices and how to implement digital circuits using them. The design flow of FPGA-based systems and the use of hardware description languages, such as VHDL, will also be covered. In the other hand, a VHDL course will focus on the specific VHDL hardware description language, including its syntax, data types and design methodologies. **oRV1 - RISC-V Architecture** This course covers and explains the implementation of the RISC-V CPU. This course provides a comprehensive overview of the RISC-V architecture and instruction set for attendees. They will learn the basics of RISC-V, including RISC-V Assembler and Simulator, writing and running assembly code, and RISC-V C Programming. The course covers topics such as interrupt and exception handling, memory management, multiprocessing and concurrency, performance optimization, hardware and system design, and future developments. Hands-on experience will be provided through lab sessions.

**oV1 - VHDL Language basics** The VHDL Language Basics course is designed to provide professionals with a comprehensive understanding of the VHDL hardware description language. The course covers basic concepts of VHDL, VHDL syntax, combinational logic in VHDL, synchronous logic in VHDL, synthesis and testbenches, and hierarchical conception.

These topics are essential for the development of digital circuits and systems using VHDL, and are applicable to a wide range of applications, including the design of FPGA-based systems. The course is suitable for professionals with a basic understanding of digital design concepts, and is designed to provide a strong foundation in VHDL language development.

**oV2 - Advanced VHDL for FPGA** This training is intended to professional who already knows how to use programmable components but also have to create and test them; it is intended to complement course oV1.