



EM01: Essential Embedded Systems Design with Xilinx FPGA

EM01: Esencial Sistemas Embebidos en FPGA de Xilinx

Language: The classes are in Spanish, but working material is in English (available also in English at In-Company).

Who Should Attend? Engineers who are interested in developing embedded systems with the Xilinx Zynq All Programmable SoC or MicroBlaze soft processor core using the Embedded Development Flow from Xilinx

Duration: 16 h (2 days, 8 h/day).

Prerequisites: FPGA design experience; Knowledge from “Essentials of FPGA Design course (FPG01)” or equivalent. Basic understanding of C programming; Fundamental microprocessors understanding; Some HDL modeling experience.

Introduction: This course update you on developing embedded systems using the Vivado® Design Suite. Features and capabilities of both the Zynq® All Programmable System on a Chip (AP-SoC) and the MicroBlaze™ soft processor are covered in lectures and labs. Additionally general embedded concepts, tools, and techniques are studied. The hands-on labs provide you with experience designing, expanding, and modifying an embedded system, including adding and simulating a custom AXI-based peripheral using bus functional model (BFM) simulation.

Skills Gained: After completing this training, you will know how to:

- Understand the key concepts to build a embedded system in a FPGA.
- Describe the various tools that encompass a Xilinx embedded design
- Rapidly architect an embedded system containing a MicroBlaze™ or Cortex™-A9

processor by using the Vivado IP Integrator and Customization Wizard

- Develop software applications using the Eclipse-based Software Development Kit (SDK)
- Create and integrate an IP-based processing system component in the Vivado Design Suite
- Design and add a custom AXI interface-based peripheral to the embedded processing system
- Simulate a custom AXI interface-based peripheral using a bus functional model (BFM)
- Understand different ways to optimize system performance in FPGA based embedded developments.

Material: Each student will have a computer with the development tools (Vivado 2016.x), documentation, repository whit exercises (and solutions) and a FPGA development board for exercises that require it.

Related Courses:

EM02: Advanced Features and Techniques of Embedded Systems Design

FPG01: Essential Vivado Design Suite: 7-Series, UltraScale, US+, TCL, Static Timing Analysis, Constraints.

FPG02: Advanced Vivado Design Suite: Static Timing Analysis and Xilinx Design Constraints

FPG03: Advanced Vivado Design Suite: Advanced Tools and Techniques

Other Xilinx Technologies courses:

HL01: HDL Logical Synthesis and Simulation for Xilinx FPGA design



EMLI: Build a Linux distribution for Xilinx FPGA

HLSI: High Level Synthesis for Xilinx FPGAs
using Vivado-HLS

SDSI: SDSoc development environment

Dates, location and registration:

Please visit www.electratraining.org

Price:

EM01: 970 € Includes cafes and lunches

Course Packs and Discounts:

EM01 + EM02: 1560 € (-20%)

FPG01 + FPG02: 1440 € (-20%)

FPG02 + FPG03: 1520 € (-21%)

HDL01 + FPG01 + FPG02: 1880 € (-25%)

FPG01 + FPG02 + FPG03: 2070 € (-25%)

HDL01+FPG01+FPG02+FPG03: 2580 € (-25%)

Additional discounts:

Previous ElectraTraining course 5%

Prior Xilinx technology course in last year: 10%

Several participant from the same company.

It is possible to use Xilinx Training Credits.