

Embedded for Success

The Xilinx Customer Education group prepares you to take advantage of embedded FPGA design.

by Stuart Elston
Senior Manager, Customer Education
Xilinx, Inc.
stuart.elston@xilinx.com

The programmable logic industry has come a long way from the world of glue logic that sits at the edge of the board. Today, FPGAs beat at the very heart of complex systems in many products and industries. Xilinx® FPGAs provide a new level of system design capabilities through soft MicroBlaze™ processors, hard PowerPC® processors and silicon-efficient architectural resources.

The technology and tools are without doubt becoming more sophisticated, yet the business pressures of time-to-market, market longevity and product flexibility demand that designers capitalize on these technology advances immediately. Training and the proactive acquisition of skills are key.

The Xilinx Customer Education group and its exclusive network of Authorized Training Providers are here to help. Complementary to our core FPGA classes, we offer four courses focused purely on embedded design, catering to both hardware and software engineers.

Our **Embedded Systems Development** course brings experienced FPGA designers up to speed on developing embedded systems using the Xilinx Embedded Development Kit (EDK). The lectures and labs also delve into the features and capabilities of the Xilinx MicroBlaze soft processor and the PowerPC 440 processor. The hands-on labs provide experience in the development, debugging and simulation of an embedded system. More specifically, the course will introduce you to the various tools that encompass the EDK, and teach you to rapidly architect an embedded system containing a MicroBlaze or IBM PowerPC processor and Xilinx-supplied CoreConnect bus architecture IP by using the Base System Builder. You will use the Eclipse-based Software Development Kit (SDK) to


develop software applications and debug software, and will create and integrate your own IP into the EDK environment.

Our **Advanced Features and Techniques of Embedded Systems Development** course gives embedded-systems developers the necessary skills to develop complex systems. Building on skills gained in the Embedded Systems Development course, it teaches students to assemble and architect a complete embedded system, and to identify the steps involved in integrating user IP. You will use a Board Support Package to target multiple operating systems, apply advanced debugging techniques, design a flash memory-based system and boot load from flash, while applying various techniques to improve performance.

The **Embedded Systems Software Development** course introduces you to software design and development for Xilinx embedded-processor systems. You will learn the basic tool use and concepts required for the software phase of the design cycle, after the hardware design is completed. Topics cover the design and implementation of the software platform for resource access and management, including device driver development and user application debugging and integration. Practical implementation tips

and best practices are provided throughout to enable you to make good design decisions and keep your design cycles to a minimum. You will have enough practical information to get started developing the software platform for a Xilinx embedded system based on a PowerPC 440 or MicroBlaze processor. This course is aimed at software engineers.

Embedded Open-Source Linux Development is a new, intermediate-level, two-day course that shows embedded-systems developers how to create an embedded open-source Linux operating system on a Xilinx development board. Hands-on experience ranges from building the environment to booting the system using a basic, single-processor system-on-chip design with Linux 2.6 from the Xilinx kernel tree. This course introduces embedded Linux components, open-source components, environment configurations, network components and debugging/profiling options for embedded Linux platforms. The primary focus is on embedded Linux development in conjunction with the Xilinx tool flow.

Our Authorized Training Providers can provide these courses in your locale. Contact them for an up-to-date schedule by going to www.xilinx.com/support/training/atp.htm. 

Upcoming Conferences

In addition to offering training at multiple locations, we exhibit our technologies at several conferences.

Conference	Date	Location
Convergence 2008	October 20-22, 2008	Detroit, MI
SDR Forum	October 26-30, 2008	Washington, DC
Electronica 08	November 11-14, 2008	Munich, Germany
MILCOM 2008	November 17-19, 2008	San Diego, CA
Embedded Technology 2008	November 19-21, 2008	Yokohama, Japan
InterBEE	November 19-21, 2008	Chiba City, Japan
CES 2009	January 8-11, 2009	Las Vegas, NV
Mobile World Congress 2009	February 16-19, 2009	Barcelona, Spain
Embedded World 2009	March 3-5, 2009	Nuremberg, Germany
Embedded Systems Conference	April 1-5, 2009	San Jose, CA