Learn Smarter, Learn Faster

With its new *Designing for Performance Live Online* course, Xilinx Education Services now offers real-time, interactive instruction over the Web. Learn at your desk from trained specialists – live online.

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Reduced training budgets, travel restrictions, and explosive advances in programmable logic technology make it harder than ever to stay on the high side of the learning curve. Combined with demands to do more in less time, your job as a design engineer – or as a manager of a design team – requires an innovative training solution that will save you time and money.

In addition to developing state-of-the-art logic devices and software, Xilinx also continues to pioneer educational opportunities that reduce engineers' time to knowledge and increase their proficiency in using Xilinx FPGA design tools. The latest offering from Xilinx Education Services, *Designing for Performance Live Online*, is an education package that combines the best of live instruction with none of the inconveniences and lost opportunity costs of travel to off-site training centers.

Learning Without Luggage

Design engineer Lukose Ninan was just getting into Xilinx FPGA design when he found out about our first online FPGA training, *e-Series I*. "I wanted a refresher course," said Ninan of ComSonics Inc. "*e-Series I* is exactly what I wanted to get up to speed on Xilinx design, and I got the information I needed without having to travel."

When Mike Schell of Convergent Design Inc. learned about the online program, he enrolled immediately. "The number one reason I prefer e-learning classes is convenience," said Schell, a design consultant. "I have deadlines to meet, and it would be lost time if I had to travel to a class."

Ninan and Schell are among a growing number of engineers and managers who use online e-learning programs to acquire or enhance existing skills (see "Benefits for Both Managers and Engineers"). According to a report from Merrill Lynch, employees in more than half of U.S. corporations used e-learning training programs in 2000. Here at Xilinx, online course enrollments have steadily increased since our initial e-learning offerings began in 2000.

Virtual Education

The *Designing for Performance Live Online* package consists of five one-hour lecture modules and four two-hour lecture-and-lab modules (see "*Designing for Performance Live Online* Modules"). This series of modules was selected from the popular *Designing for Performance* course. Each module is delivered live on the World Wide Web.

The entire package is available for $900 USD or nine training credits, and you can register and pay for the package online. If you prefer, you may purchase modules individually.

The modules are scheduled sequentially, two per week, over a five-week time period. Some students say these smaller units of content provide a more lasting learning effect compared with the average content retention rate for intensive, all-day seminars.

"It's not necessary to have all the information in an eight-hour class," Schell said. "That's what I really like about the program. You have a day or two to absorb the

Benefits for Both Managers and Engineers

As a manager, you will benefit from *Designing for Performance Live Online* if:

- You plan to hire engineers throughout the year and would like to offer this packaged training to new hires as they come on board.

- You do not have a sufficient number of engineers at any one time to warrant an on-site learning program.

- You do not want to send the engineers away for training because of time or budget restrictions.

- You want accessible, consistent, and affordable training for your engineers who have experience with Xilinx ISE software tools but who need to enhance their knowledge of FPGAs.

As a design engineer, you will learn how to:

- Use synchronous design techniques to improve performance.

- Design synchronization circuits to improve design reliability.

- Write HDL code to efficiently target Virtex-II architecture resources.

- Generate customized cores using the CORE Generator™ system.

- Estimate power consumption using the XPower utility.

- Pinpoint design bottlenecks by interpreting timing reports.

- Apply advanced timing constraints to meet your performance objectives.

- Improve design performance by using advanced implementation options.

After you register for *Designing for Performance Live Online*, Xilinx will send you a series of e-mails containing the URL address and phone number for each session, along with lab requirements and instructions. Ten minutes before each session begins, you can log in and download the presentation materials and lab documentation so you will be prepared for class.

Conclusion

The *Designing for Performance Live Online* series delivers a convenient, advanced training solution for design engineers who have taken the Xilinx Fundamentals course or who have equivalent knowledge of Virtex™-II architecture, software tool flow, and global timing constraints. This *Live Online* course focuses on enhancing your knowledge of the latest Xilinx FPGA design tools and techniques. To learn more about *Designing for Performance Live Online* or other Xilinx e-learning courses, visit the Xilinx Education Services website at *support.xilinx.com/support/education-home.htm* or call the registrar at 877-XLX-CLAS (877-959-2527).

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information before the next session. It's easier to learn that way."

The predetermined schedule lets you lock in your dates ahead of time. If by chance you miss a session, the sequence is repeated every five weeks. You may even begin the series with almost any of the first five modules, but units 6 through 9 are somewhat dependent upon each other and should be taken sequentially. Once you have completed *Designing for Performance Live Online*, you'll receive a Certificate of Completion to add to your record of continuing education credits.

A Classroom at Your Fingertips

As the name promises, *Designing for Performance Live Online* is delivered by a live instructor – no recordings. At the beginning of each interactive session, the instructor will review labs and address any questions you may have before moving on to the lecture.

Real-time, synchronous training sessions create an environment where you can ask questions and hold collaborative discussions. Also, you can use the chat feature to ask questions of other engineers in the class, or pose your questions to the instructor.

All you need to begin *Designing for Performance Live Online* are a Web-enabled computer and a telephone line. You will log on to an online server (provided by Toolwire) to run the lab exercises. Before enrolling in this class, you must pretest your system to ensure that it will perform the labs in the Toolwire virtual environment. Go to *support.xilinx.com/support/training/using-toolwire.htm* and follow the steps for testing your network, connection speed, firewall compatibility, and installation of the Citrix ICA client software. Once you have pretested your system, you will be able to connect to the Toolwire remote Windows 2000 desktop. If any issues arise, simply contact the registrar at 1-877-959-2527 for support.

Designing for Performance Live Online Modules*

1. FPGA Design Techniques

2. HDL Coding Style (and lab)

3. Synthesis Techniques (and lab)

4. CORE Generator™ System (and lab)

5. Xpower

6. Achieving Timing Closure

7. Timing Groups and Offset Constraints

8. Path-Specific Timing Constraints (and lab)

9. Advanced Implementation Options

*Modules are subject to change to stay current with emerging technology. For the most up-to-date information, visit the Xilinx Education Services website at *support.xilinx.com/support/education-home.htm*.