

## "FPGA based SoC Design"

Organised By

**Electronics & ICT Academy**  
**IIT Roorkee**



in association with



**Centre for Development of  
Advanced Computing, Mohali**

**Nov 27, 2017 - Nov 29, 2017**

### Expert from Industry

Ankur Sangal

CoreEL Technologies,

New Delhi



### Guest Lecture from Academia

Dr. B.P. Das

ECE Dept.

IIT Roorkee

Supported by

Ministry of Electronics & Information Technology  
Government of India



**Venue**

**C-DAC, A-34 Industrial area, Phase-  
VIII, Mohali Punjab**

## Objective of the Course

- Create and understand HDL Design using FPGA.
- Implement sequential and combinational design using Xilinx Vivado Tool.
- Xilinx Design Constraints.
- Debugging using Vivado Logic Analyzer cores.
- Simple Hardware Design.
- Adding Peripherals in Programmable Logic.
- Project implementation like UART & Traffic Light Controller.

## Benefits and Outcomes of the Course

- Create and debug HDL designs.
- Configure FPGA architecture features, such as Clock Manager, using the Architecture Wizard.
- Pinpoint design bottlenecks using the reports.
- Utilize synthesis options to improve performance.

At the end of the program, participants will be able to:

- Upgrade the lab facilities in the parent institutes in areas of FPGA based design, image processing, wireless communications etc.
- Guide/Mentor the students to seek opportunities in application specific integrated circuits (ASIC), Electronics design automation(EDA), speech recognition, test & measurements etc.

## Lab Platform/Boards

- Windows
- XILINX VIVADO system edition
- ZedBoard Zynq™-7000 Development Board

## Focus Areas

- Vivado Design Flow
- Xilinx Vivado Tool Flow with FPGA based coding technique.
- Xilinx Design Constraints.
- Timing constraints and perform the timing analysis.
- Vivado Logic Analyzer cores to debug/analyze system behavior.
- IP Integrator to develop a basic embedded system for a target board.
- Extend the hardware system by adding AXI peripherals from the IP catalog.
- IP Integrator and Embedded system design flow.

## Program Features

- The program is split into lectures and labs sessions.
- Hands-on experience on basic & advanced-level topics.
- Interaction & learning with experts from academia & industry.
- Certificates to the participants by E&ICT Academy IITR.

## Coordinators

IIT Roorkee

- Dr. Sanjeev Manhas, PI, E&ICT Academy
- Dr. B.P. Das, ECE Dept.

C-DAC Mohali

- Mr. Gurmohan Singh, Principal Engineer  
gurmohan@cdac.in, 8847033945
- Dr. Sanjay Sood, Joint Director  
spsood@cdac.in, 9988883660

## Who Can Attend ?

Program is open to faculty members/research scholars/PG students from colleges/universities, and industry personnel working in the concerned/allied discipline.

## Registration Fee

Faculty members: ₹ 1,500/-

Research scholars: ₹ 1,500/-

Persons from Industry: ₹ 2,000/-

(with Food & Accommodation)

## Payment Details

DD in favor of "Dean SRIC IIT Roorkee" payable at Roorkee

"OR"

Make Online Payment by NEFT/RTGS on given detail

Account Name: Research Project, IIT Roorkee

Account Number: 33012172097

IFSC code: SBIN0001069

## How to Apply

Step 1: Make Payment

Step 2: Participants may fill registration form through Academy website (<http://eict.iitr.ac.in>).

OR

Step 2: Send a duly filled-in registration form along with Demand Draft to Academy address.

Mr. Prateek Sharma, EICT Academy, ECE Department, IIT Roorkee-247667

## Important Dates

**Last Date For Online  
Registration:  
25th Nov 2017**

**Last Date For Receiving  
Application: 26th Nov 2017**

## EICT Academy IITR

Electronics and ICT Academy (E&ICT) at IIT Roorkee (funded by Ministry of Electronics and Information Technology) aims to enrich and upgrade teaching and research competences of engineering faculties of institutes/colleges by conducting courses and workshops in fundamentals as well as emerging areas of E&ICT and enabled areas. The programs are conducted by well-known industry partners, resource persons from leading academia and experts from renowned R&D organizations.



## Activities of the Academy

- Specialized training on basic and advanced level topics with hands-on experience in the emerging areas of Electronics & ICT.
- Setup the activity centers to conduct FDPs locally at institutes/colleges.
- Curriculum development for the industry.
- Continuing Education Programme for students/working professionals.
- Design, develop and delivery of specialized modules for specific research areas in industry.

Faculty Development Program  
on

"FPGA based SoC Design"

Nov 27, 2017 – Nov 29, 2017



## REGISTRATION FORM

Applicant Name \_\_\_\_\_

Gender: \_\_\_\_\_

Category (GEN/OBC/SC/ST): \_\_\_\_\_

Designation: \_\_\_\_\_

Name and Address of the  
Organizatio/Institute: \_\_\_\_\_

City/Town: \_\_\_\_\_

Email: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Do you need Accommodation?  
(Yes/No): \_\_\_\_\_

DD Number: \_\_\_\_\_

Date: \_\_\_\_\_

Issuing Bank: \_\_\_\_\_

Payable at: \_\_\_\_\_

Signature of the Applicant

## Contact Us

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