

## COURSE HIGHLIGHTS

- Use Xilinx Design Constraints to communicate performance
- Rapidly architect an embedded system targeting the ARM processor of Zynq Device using Vivado and IP Integrator
- Extend the hardware system with Xilinx provided peripherals
- Create a custom peripheral and add it to the system
- Debug a design using Vivado hardware analyzer
- Use Vivado HLS to generate an IP-XACT compliant hardware accelerator

## COURSE CONTENT

### Day-1

- 7-Series Architecture Overview
- Vivado Design Flow
- Lab 1: Creating an HDL Design
- Use Vivado IDE to create a simple HDL design. Simulate the design using the XSIM HDL simulator available in Vivado design suite.
- Generate the bitstream and debug the design using Vivado Logic Analyzer
- Introduction to System Generator
- Lab2: Creating a Design in a FPGA using Xilinx System Generator
- Creating a Design using Discrete Sources
- Lab3: Connecting Zynq with XADC.

### Day-2

- Image Processing Applications Using Zynq SOC
- Lab4: Design Flow for Image Processing Using Xilinx System Generator
- Lab5: Modeling Gray Scale Image Enhancement, Image Thresholding, Image Contrast Stretching using Xilinx System generator
- Lab6: Modeling Blocks with C/C++ Code using HLS and XSG
- After completing this lab, you will be able to incorporate a design, synthesized from C, C++ or SystemC using Vivado HLS, as a block into your MATLAB design.
- Lab7: Audio Processing Application using Zynq APSOC

## ORGANIZING COMMITTEE

### CHAIRMAN

**Dr. R. Rudramoorthy**  
Principal, PSG College of Technology

### CONVENOR

**Dr. S. Subha Rani**, Professor and Head, ECE

### CO-CONVENOR

**Dr. P. Kalpana**, Professor, ECE

### COORDINATORS

**Dr.S.Allin Christe**, Associate Professor, ECE

**Dr.M.Santhanalakshmi**, Associate Professor, ECE

**Dr.K.Rajalakshmi**, Associate Professor, ECE

## RESOURCE PERSONS

### Mr. Rajesh Murugan,

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CoreEL Technologies, Bangalore.

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CoreEL Technologies, Bangalore.

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## REGISTRATION DETAILS

### How to Apply?

Registration for workshop can be made by sending the duly filled in application form along with Demand Draft for Rs 1500/- drawn in favor of "PSG CNCE" payable at Coimbatore.

**The duly filled application form can be sent to**

The Admission Counsellor,  
PSG Centre for Non-Formal & Continuing Education  
PSG College of Technology,  
Coimbatore -641 004

Phone: 0422-4344448, 4344136, 4344777

For further enquiries and communication, contact

**COORDINATORS, Department of ECE**

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**Mobile: 9789456689 / 9791017546**

## PSG Centre for Non-Formal & Continuing Education Workshop

On

*Signal and Image Processing on  
Zynq-7000 SoC using Xilinx Vivado  
Tools*

**27<sup>th</sup> and 28<sup>th</sup> September 2018**



**Organized by**

**Department of  
Electronics & Communication  
Engineering**

**In Association with**



## ABOUT THE COLLEGE

PSG College of Technology established in the year 1951 by the PSG & Sons' Charities Trust is an AICTE approved autonomous institution affiliated to Anna University and is an ISO 9001:2008 certified institution. PSG College of Technology believes in creating and disseminating knowledge and skills in core and frontier disciplines through innovative educational programmes, industrial training, research and consultancy and developing a new cadre of professionals with a high level of competence, deep sense of social commitment and ethics.

## ABOUT THE DEPARTMENT

The department of Electronics and Communication Engineering came into existence in the year 1968. Ever since its inception, it has been splendid in providing dynamic and quality engineers to the society till date. The department has undergraduate programme in Electronics and Communication Engineering and Post Graduate Programmes in Communication systems, VLSI Design, Wireless Communication and Nanoscience & Technology offering high class technical experience to the students. Our institution is one among the 32 institutions in India under a Special Manpower Development Project (SMDP) for VLSI which was initiated by Department of Electronics and Information Technology (DEITY) from the year 2000. The third phase of the project, Chip to System Design (SMDP-C2S) has been initiated for next five years. Our unique feature is to provide the world class state of art facilities by having close collaboration with leading industries like Intel, Keysight Technologies, Freescale, Caterpillar, HCL and Texas Instruments resulting in cross fertilization of the theory with practice which as bagged the AICTE-CII award 2013 for the best industry linked institute. The department has produced 76 doctoral candidates and about 87 doctoral researches are in progress.

## ABOUT CoreEL TECHNOLOGIES

CoreEL Technologies (I) Pvt Ltd, CoreEL is a customer Application Specific Products & Solutions company offering Intellectual Property (IP) Hardware, Software & Engineering Services to customers, enabling them to Design Manufacture and Market world class electronic products. CoreEL was founded in 1999 and is an ISO 9001:2008. The portfolio of offerings include IP cores, System Design Architecture, Validation, Sustenance,

Prototype Manufacturing, Next-Gen products, Semiconductor solutions & Distribution of EDA Tools & COTS products. CoreEL was founded in 1999 and is an ISO 9001:2008 certified headquartered at Bangalore India.

## ABOUT CoreEL UNIVERSITY PROGRAM

CoreEL University Program provides Eco-System support to Indian Academia in Engineering Higher Education, in the field of embedded systems thereby enabling the delivery of quality education. CoreEL university achieves this by providing state of the art products from XILINX, MENTOR GRAPHICS, MATLAB, ANSYS, VxWorks (WIND RIVER), Speedgoat (Rapid Controller Prototyping, Hardware-in-the-Loop simulation, and deployment,) PCB Design Tools from Mentor Graphics, Analog Discovery Kits from Digilent (Analog Discovery kit can replace the conventional regulated power supply, Function Generator, Oscilloscope, and smaller parts like Bread board etc with one portable, compact and power effective and low cost solution!) to universities Multiyear application engineering support on these products, faculty and student training, providing industry specific inputs to update the curriculum and helping universities set up Centers of Excellence in Embedded Systems arena

## ELIGIBILITY

Faculties from AICTE approved Engineering Colleges with relevant background. Candidates from industries and R & D organizations will also be considered. PG students in related discipline are also eligible.

## PRE-REQUISITES

- Digital design experience
- Basic HDL knowledge (VHDL or Verilog)
- System level design experience using Xilinx FPGA
- Basic experience with Xilinx Vivado design software suite
- Good understanding of C programming

## SCHEDULED DATES

**Last date for Registration: 25<sup>th</sup> September 2018**

## APPLICATION FORM

Workshop  
On

Signal and Image Processing on Zynq-7000 SoC using Xilinx Vivado Tools

1. Name :
2. Designation :
  
3. Educational Qualification :
4. Name of the Institute :
  
5. Address for Communication :
  
- Email :
- Mobile :
6. Professional Experience :  
Teaching :  
Industry :
7. Accommodation needed: Yes/No

### Declaration:

The information furnished above is true to the best of my knowledge.

Date:

Place:

Signature of the  
Applicant

Mr./Ms./Dr. \_\_\_\_\_ is an employee/student of our institute. He / She will be permitted to attend the programme if selected.

Date:

Place:

Signature & Seal of  
Head of Organization