

Registration Form

Name of the Applicant (first, last):

.....

Gender:

Designation:

Highest Qualification:

Name and Address of the Organization/Institute:.....

Category : (GEN/OBC/SC/ST/Others).....

City/town:.....

Email:.....

Phone Number:.....

Mobile Number:.....

Do you need accommodation?

(Yes/No):.....

Transaction ID (Applicable for Online Transaction):.....

Signature of the Applicant:.....

Signature and Seal of the Forwarding Authority

Name

Designation

Note: The Faculty/Staff are requested to submit the NOC from respective department before attending the session.

*Affix passport
size
photograph*

Registration Fee

Registration Fee (Snacks and Lunch)

- **Rs. 2 500 + Rs. 450 (GST)** for Faculty, Lab Technicians and Project Staff
- **Rs. 1,250 + Rs. 225(GST)** for SC/ST Category Faculty .
- **Rs. 5,000 + Rs. 900 (GST)** for Industry Personnel, Research Scholars and Students.

Mode of Payment: Online Only (RTGS/NEFT)

For Online Transfer

Bank Name: State Bank of India
Account Name: IIT Guwahati R&D E&ICT Academy
Account No.: 36071160089
IFSC Code: SBIN0014262
Bank Name: State Bank of India
Bank Address: IIT Guwahati, GHY- 39.

Course Coordinators From Academy

- **Prof. Ratnajit Bhattacharjee**
Principal Investigator
E&ICT Academy, IIT Guwahati
- **Prof. Rohit Sinha**
Co-Principal Investigator
E&ICT Academy, IIT Guwahati
- **Dr. Gaurav Trivedi**
Co-Principal Investigator
E&ICT Academy, IIT Guwahati

Course Coordinators From NIT Nagaland

- **Dr. P. Chinnamuthu**
Head of the Department
Department of ECE,NIT Nagaland

Expert from Industry

- **Shri. H S Jatana**
Group Head, Design & Process Group
Semi Conductor Lab ,Chandigarh
- **Mr. H.Balachander**
FAE Manager CoreEL Technologies

Course Programme

Workshop Programme is split into two parts:

- Lectures.
- Labs/Hands-on sessions daily.

Contact Details

For more details or any queries please contact
Project Manager
E&ICT Academy IIT Guwahati
Email: eictacad@iitg.ernet.in,
eictacad@gmail.com
Phone No: +91-361-258-3009, 3182

How To Reach NIT Nagaland

Please visit link provided below for location of NIT Nagaland:
<http://nitnagaland.ac.in:8080/homenew/common/location.jsp>



An Initiative of Department of Ministry of
Information Technology (MeitY).

Government of India
Electronics & ICT Academy
IIT Guwahati, Assam



A Faculty Development Programme

**ASIC DESIGN FLOW USING MENTOR
GRAPHICS TOOLS**



support from CoreEL Technologies.



Applications are invited from Faculty Members/ Research Scholars/PG & UG Students/Lab Technicians/Project Staffs from Universities/Colleges/Schools & Industry Personnel working in the concerned discipline can attend the Faculty Development Programme on

“ASIC DESIGN FLOW USING MENTOR GRAPHICS TOOLS”

Course Date: 4 Dec - 15 Dec 2017

Last Date of Registration: 1.12.2017

(Online Registration Link will be open from 01.11.2017)

**Venue: Department of ECE,
NIT Nagaland**

Course Outcome

The participants are expected to understand:

- Brief introduction CMOS VLSI Design
- Discuss Full custom and semi-custom design flow
- Discuss the Pyxis tool flow for CMOS Design
- Discuss Layout Design rule
- Learn Design rule check and parasitic extraction
- Discuss semi-custom design flow
- Discuss the Simulation & Synthesis tool flow for CMOS Design
- Brief introduction to design for testability, ATPG
- Discuss floorplan, Placement routing
- Brief introduction about Analog mix signal design flow
- VCVS- Voltage buffer design
- CCCS – Current buffer design
- OTA/OPAMP Design
- Freq response of Single Tx configurations
- Freq response of OTA
- Choice of passive components in analog Design
- Physical implementation of chip- layout considerations
- Data converters, Issues in design of Sigma delta ADC
- Data converters , Issues in Pipeline ADC
- Testing and packaging issues – wafer soring, device testing and
- Packaging, QA, Failures mode in MOS

Hands-on Session

The Hands- on session will include the following:

- Create inverter design using mentor graphics pyxis schematic tool
- Simulation using ELDO simulator and viewing waveform on Ezwave
- Lab for DC and transient analysis using Pyxis and Ezwave
- Create NAND design using mentor graphics pyxis schematic tool Simulation using ELDO simulator and viewing waveform on Ezwave
- Create CMOS based CSA design using mentor graphics pyxis schematic tool Simulation using ELDO simulator and viewing waveform on Ezwave

- Generating RTL Netlist using synthesis tool
- Scan chain insertion on 8- bit counter with different scenarios ATPG .
- Post-DFT Verification
- Layout design from RTL gate level netlist using Pyxis IC assemble
- Perform Layout versus Schematic with Calibre tool
- Removing DRC error in layout with the help of Calibre tool
- Perform Parasitic extraction and generate pex file
- Implement semi-custom design flow with 4 bit counter
- HDL Design ,HDL Simulation ,ASIC Synthesis ,BIST Scan Chin Insertion ,Pre -Synthesis simulation ,ATPG,DFT Verification ,Layout design ,DRC, LVS, XRC ,Post layout simulation
- Create an Analog Mix signal design using Questa AMS tool with Verilog AMS
- Create an Analog Mix signal design using Questa AMS tool with HDL & SPICE coding
- Perform spice simulation using ELDO and EZ wave
- Generate physical layout of Common Source amplifier using Pyxis Layout
- Perform physical verification using Calibre tool
- Create GDS II file and verify the layout using Calibre tool
- Create 8- counter RTL Code using mentor graphics simulation tool
- Create CMOS based differential amplifier design using mentor graphics pyxis schematic tool
- Generating layout from schematic using Pyxis layout tool
- Remove all DRC errors and create GDS II file
- Removing DDRC error in layout with the help of Calibre tool
- Perform Layout versus Schematic with Calibre tool
- Generate physical layout of Nand using Pyxis Layout
- Create NOR design using mentor graphics pyxis schematic tool Simulation using ELDO simulator and viewing waveform on Ezwave
- simulation of analog circuit
- Analog layout

Preferred Pre- Requisites for the Course

The preferred Pre-Requisites for the course are:

- Knowledge of Basic Electronics.
- Basic knowledge on Mentor graphics tools
- Familiarity with Windows & Linux Environment.

About E&ICT Academy

MeitY has sponsored a scheme entitled "Scheme of Financial Assistance for setting up of Electronics and ICT Academies". Electronics and ICT Academy would aim to provide specialized training to the faculties of Engineering, Arts, Commerce & Science colleges, Polytechnics etc, by developing state-of-the-art facilities. Academy has planned short term training programmes on fundamental and advanced topics in IT, Electronics & Communication, Product Design, Manufacturing with hands on training and project work using latest software tools and systems.

Who Can Attend

Programme is open to Faculty Members, Research Scholars, PG & UG Students, Lab Technicians and Project Staffs from Universities , Colleges & Schools. Industry Personnel working in the concerned/allied discipline may also apply.

How to Apply

Online – The participants may log on to the E&ICT Academy, IIT Guwahati website: <http://eictacad@iitg.ernet.in> and fill up the google doc application form.

Through Email – Scanned copy of the filled in application form duly endorsed by the, forwarding authority is to be mailed at E&ICT Academy's email id eictacad@gmail.com, eictacad@iitg.ernet.in). Application format given in this brochure may also be downloaded from the website.

Contact Hours for the Course
88 Hrs (Theory, Hands-on & Tutorial)

For details please log on to Electronics and ICT Academy website: <http://eict.iitg.ernet.in/>