



Electronics & ICT Academy IIT Roorkee



An Initiative of
**Ministry of Electronics
& Information
Technology (MeitY)**
Government of India

A Faculty Development Program on

Advances in e-Devices and IC Design with Pedagogical Insights

In association with

E&CE Department, NIT Hamirpur (HP)

Sep 26 – Sep 30 , 2025

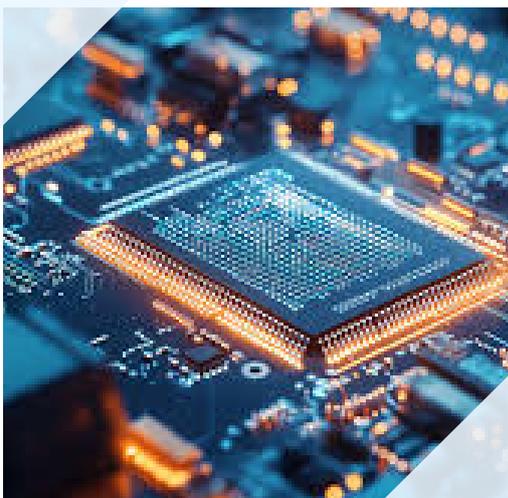
Register Before: Sep 19, 2025



**Venue: Online Mode at E&CE Department,
NIT Hamirpur (HP)**

Objectives of the Course

- To provide insights into recent developments in electronic devices and IC design
- To explore VLSI design, fabrication, and low-power techniques
- To introduce emerging technologies like GaN HEMT and neuromorphic computing
- To offer hands-on training with Verilog, GENUS, HFSS, and SPICE
- To integrate pedagogical practices in engineering education
- To promote industry-relevant knowledge and practical application.



Why this course ?

The rapid evolution of electronic devices and integrated circuit (IC) design demands continuous upskilling of educators and professionals. This course bridges cutting-edge advancements—such as neuromorphic computing, low-power ICs, and GaN HEMT technologies—with practical tools like GENUS, Verilog, and HFSS. Additionally, it integrates pedagogical strategies tailored for engineering education, empowering faculty to deliver complex concepts effectively. By blending theory, simulation, and hands-on experience with industry perspectives, the program equips participants to innovate in both classroom teaching and technical research.

Prerequisites

No experience is required, but fundamental knowledge of any programming language would be helpful.

Experts from Academia/Industry

Who Should Register?

Any Interested Faculty/PhD-Scholars
UG/PG/ & Industry Persons can register

Registration Fee

Fees: ₹ 250/- Faculty/Research Scholar/ Students
₹ 500/- Industry/Others

Note: Refund will be done in case of course cancellation only, with in 20 working days

FDP Kits & Refreshment will be provided

How to make Payment

Please make the payment first using the below link
upload the payment receipt when filling out the
Google registration form

<https://eict.iitr.ac.in/instruction-for-payment/>

EICT Course Code: EICTIITR-FDP-5H6-09

Registration Link

<https://forms.gle/C5qgcpAc6BcJe4gr6>



Scan QR for
registration

Register before:
Sep 19 , 2025

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Course Outcomes

- Understand trends in advanced e-devices and IC design
- Apply VLSI and analog IC design principles in practical settings
- Gain proficiency in tools like GENUS, HFSS, SPICE, and Verilog
- Conduct FPGA-based and IC layout experiments
- Evaluate new technologies like neuromorphic computing and GaN devices
- Incorporate pedagogy-driven approaches into technical instruction
- Collaborate effectively with industry and academia for innovation

Focus Areas

- More-than-Moore multi-gate emerging semiconductor devices
- Device modelling using TCAD tools
- Semiconductor fabrication processes and cleanroom environments
- Semiconductor Packaging
- Analog Integrated Circuit Design Methodologies
- Low-power design techniques
- SPICE models, EDA Tools and analysis

Course Features

- 40 Hours of Lectures, hands-on, and Pedagogy/Industry sessions.
- Lectures from Expert Speakers, Hands-on from industry/Academia experts.
- Access to learning material and video lectures
- Certificate by E&ICT Academy IIT Roorkee

Who may benefit

- Academic Faculty and Students(UG/PG)
- Government Officials.
- Working Professionals in the Industry and Startups.
- Research Scientists and Technical Staff.

This certificate can be considered in alignment with other Quality Improvement Programs (QIP) as well as **NBA** and **NAAC** for recognition/credit.

Principal Investigator

- **Prof. Sanjeev Manhas** ECE
Department, IIT Roorkee

Course Coordinators

- **Prof. Sanjeev Manhas**, IIT Roorkee
- **Dr. Rohit Dhiman**, NIT Hamirpur
- **Dr. Ashwani Kumar Rana**, NIT Hamirpur
- **Prof. Rajeeven Chandel**, NIT Hamirpur

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