Electronics & ICT Academy
IIT Roorkee

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

सत्यमेव जयते

Joint Faculty Development Program
on

Intricacies of Analog & Mixed Signal design

Two - Week Joint Faculty Development Programme

In association with

Feb 17 - Feb 28, 2025

04:00 PM - 08:00 PM
Everyday

Register Before: Feb 14 , 2025

Mode of Delivery is Online

About E&ICT Academy

Electronics and ICT Academy is an initiative of Ministry of Electronics & Information Technology (MeitY), Govt. of India for conducting various Faculty/ Research Scholar Development Programme. Academy has planned short-term training programs on fundamental and advanced topics in IT, Electronics & Communication, Product Design, and Manufacturing with hands-on training and project work using the latest software tools and systems. In addition, the Academy will conduct specialized/customized training programs and research promotion workshops for corporate sector & educational institutions.

Prerequisites

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

Objectives of the course

- Provide an in-depth understanding of MOS device physics and the design and behavior of amplifiers.
- Explore advanced OpAmp and current mirror designs, emphasizing stability and compensation techniques.
- Introduce design principles for sample and hold circuits, addressing charge injection and bias-related challenges.
- Familiarize participants with DAC and ADC architectures, their non-idealities, and practical design considerations.
- Develop expertise in PLL design and analysis, including small-signal modeling and practical implementations.

Focus Areas

- MOS Device Physics and Amplifiers
- Noise in Amplifiers and Current Mirrors
- Operational Amplifiers
- Sample and Hold Circuits
- Data Converters Advanced ADC Architectures Approximation ADC, Flash ADC.
- Phase-Locked Loops
- Low-Power Design Techniques in Analog Circuits

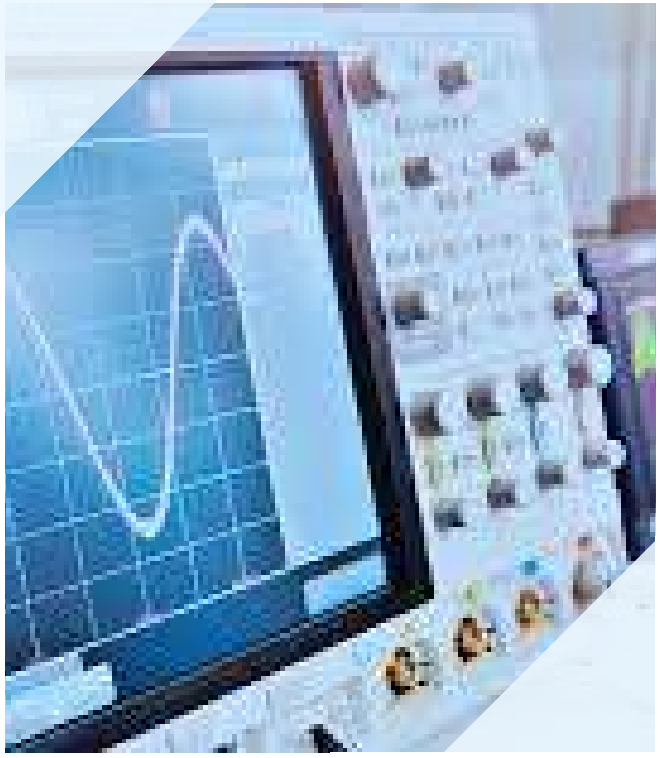
Course Features

- 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

Course Outcomes

Participants are likely to:

- Analyze and design MOS-based amplifiers, addressing key factors like frequency response, noise, and stability.
- Design robust OpAmps and current mirrors, ensuring optimized performance through frequency compensation techniques.
- Develop efficient sample and hold circuits, compensating for non-idealities like charge injection and bias dependency.
- Design and evaluate DAC and ADC systems, tackling static and dynamic non-idealities and implementing advanced architectures like Sigma-Delta Modulators.
- Implement and analyze PLL designs.



Experts from Academia/Industry

Who Should Register?

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

Registration Fee

Fees: ₹ 500/- Faculty/Research Scholar
Note: Registration Fee is Refundable if the cancellation request is submitted before the last date of registration.

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/

Conference Code: EICTIITR-FDP-25-29

Registration Link

https://forms.gle/MphMmZ5S4qovgYbu9

Scan QR for registration

Register before:
Feb 14 , 2025

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Resourse Person

- Prof. Sreehari rao patri, NITW,
- Prof Gjendranadh, IITH
- Prof Saurabh Saxena, IIT Madras
- awiaited), Prof Kapil Jainwal, IITH
- Prof Nagendra IITM

Principal Coordinator

Prof. Sreehari Rao Patri, NIT Warangal

Joint Principal Coordinators

- Prof. Sanjeev Manhas, IIT Roorkee
- Prof. Saravana Kumar M , IIT Roorkee
- Dr Anil Kumar, IIITDM Jabalpur
- Dr. Balchand Nagar, NIT Patna
- Dr. Menka Yadav, MNIT Jaipur
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