Faculty Development Program on "Electronic Circuit Engineering – Analog Circuits – Op Amp Based" from 13th to 15th June 2016

Electronic circuit labs are foundational courses, for every engineer. Circuit theory can be learnt in theory classes, while lab courses help in actually building the circuit and analyzing it. Integrating simulation along with actual implementation enhances understanding of basic components and makes a person confident to build circuits. It also emphasizes the importance of simulation for circuit design.

In the 3 days FDP, NI myDAQ, NI Multisim & NI LabVIEW platforms are used to teach Electronic Circuit Engineering.

NI LabVIEW is ultimate system design software. NI Multisim is a comprehensive environment for teaching theory & concepts in analog, digital, and power circuit courses. The pedagogical features of Multisim are built into an intuitive interface powered by industry-standard SPICE simulation. NI myDAQ is portable measurement & instrumentation Device designed for hands-on learning and project development. NI myDAQ integrates eight common lab instruments into one student-ready device.

Using above circuit teaching environment (NI Multisim), Portable measurement device (NI myDAQ) and PCB boards from United Electronics, Bengaluru, following topics are covered in 3 days FDP

- LabVIEW as a Graphical System Design Environment
- Analog Circuit Engineering: WHY? WHAT? HOW? Importance of Performance measurement of OP AMP based circuits and Op Amp Based Active Filter Design
- NI Multisim as a Modeling and Simulation Design Environment
- Realization of Active Filter using Multisim (Simulation), comparing results considering real-world signals
- PLL - WHY? WHAT? HOW? Demystifying PLL as a Circuit Element
- PLL performance measurement (PLL boards from United Electronics, Bengaluru)
- PLL Applications (Demonstration)
- LabVIEW Multisim Co-simulation
- Demonstration of various NI hardware useful in academic area such as NI myRIO


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