NSTP 2016

In Association With

EDC IIT ROORKEE

2-Days workshop

On

PCB & Analog Circuit Designing

This workshop will provide college students a base to Printed Circuit Board Designing. They will be developing their own models by their own hands. These projects focus on PCB Designing. The workshop focuses on application and use of technology rather than their internal working so that a person can grasp the concepts well.

Workshop Duration: 2 days (16 hrs.)

The duration of this workshop will be two consecutive days, with eight hour session each day in a total of sixteen hours properly divided into theory and hands on sessions. At the end of this workshop, a small competition will be organized among the participating students and winners will be awarded with a Merit Certificate.

About Workshop:

"This is a Workshop which is best suited to beginners who are taking their first step towards PCB Designing. This workshop basically deals with designing various kinds of electronic circuits and their use in making PCB Designing.

Two Day workshop Schedule:

DAY 1:

- **Introduction**
  - PCB & Analog Circuit Designing
  - Basic of Hardware & Software
  - New & Upcoming Technologies
  - PCB Designing Software (PSpice & Eagle)
  - Introduction of schematics
  - General Features
  - The Side Toolbar
  - The Top Toolbar
  - Components and Symbols
  - Beginning a New Schematic
  - Placing Symbols and Ports Using the Toolbars
  - Wiring Components Together
  - Working with Wires
  - Making Custom Schematic Components
  - Copying, Deleting and Moving Items
  - Final Circuit
  - Checking for Errors

➢ Creating The Layout

- Linking the Schematic and PCB Files
- Miscellaneous Problem For PCB

➢ Circuit Designing

- Overview
- To place an MCU
- Start/Open/Create Schematic
- Place Components
- Virtual Components
- Rotate Component
- Place Wire Connect Components.
- Change Component Values
- Grounding
- Simulation

➢ Different tools used for PCB designing

➢ Introduction to all types of electronics components and testing/measuring instruments.

➢ Practical verification of electronic components with Multimeter.

➢ Different Circuit on PCB Designing Software.

- DC/AC Analysis of circuits. RC, RL, RLC Circuits & Resonance.
- Transformer Designing
- Diode & Application Circuits
- Clipper and Clamper Circuit
- BJT/JFET Amplifier Designing
- Operational Amplifiers & Application Circuits
- Flip Flops Designing
- Analog Filter Designing
- Voltage Regulators & Power Supply Circuit Design Oscillator Circuit.

➢ Schematics of Different Circuit

DAY 2:

➢ Analysis Components

- Debugging Tools
- Multisim MCU Module Source Code Editor
- MCU Design Overview
- MCU Wizard
- Building an MCU Workspace
- Errors and Warnings
- Simulation of Machine Code File
- Multisim MCU Module Source Code Editor
- Opening a Debug View
- Debug Window Settings
- Simulation Markers
- Breakpoints
- Memory View
- Miscellaneous Problem for Multisim

➢ PCB Designing

- Making circuit on PCB Design Software
- Deploying basic circuits from paper to schematic window
- Testing the schematic for errors
- Making Board Layout
- Checking for errors and finalizing layout

➢ Testing and Trouble shooting

- Testing and troubleshooting once your PCB is ready.
  - Various trouble shooting techniques.

Note: These are just the major aspects that we will be discussing, each point will be elaborated in detail with demonstrations of the tools and techniques.

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Kit Content

✓ **Software CD (With Projects)**

Prerequisite for Workshop

- **Passion to learn new creative things.**
- **Basic Knowledge of electronic Component & Circuit.**
- **Having basic knowledge of Computers.**

Who Could Attend?

- **College students seeking future in PCB Designing.**
- **Education Faculty & Staff in PCB Designing.**
- **Electronics, Instrumentation & Communications Students.**
- **Students from any branch can attend the workshop.**

Workshop Highlights

- **Learn & Interact with renowned Industry Experts.**
- **Receive an unparalleled education on the art of PCB designing with personal one-on-one attention.**
- **Covers all the basics of Electronics component & Circuit & Software tools.**
- **Printed material developed by well-established Industry experts.**
- **Hands on Demonstrations of Latest PCB Designing Techniques & Tools.**
- **PowerPoint Presentation, Live Demos, Interactive Question & Answer sessions and comprehensive reading material.**

Registration Charges

Registration Charges Rs. 1250/- Per Participant only.

The fee includes workshop training, certification, and Event registration and a free advance PCB Designing Tool Kit to each Participant.