



Skill Development Training Program on "Electronic System Design "

Organized By

Department of Electronics and Communication Engineering,
CEG Campus, Anna University, Chennai - 25.

About the ESD Facility:

The Electronic System Design Facility consisting of (PCB Component Assembling Lab, Soldering Station Lab Rapid Soldering and Inspection Lab, LASER Printed Circuit Board Lab and RF PCB Design Lab) has been created under the University with Potential for Excellence scheme funded by UGC in the Department of ECE and it has a well-established, state of art facility under one roof for Electronics System Design. This infrastructure currently trains the students of ECE department, who are performing exceedingly well and are hired by the leading industries and Institutes. With this foundation we would like to extend the advantage to the people involved with electronics system design and manufacturing. This will help create more entrepreneurs which is in-line with start-up India to develop an Electronic Prototype Product Development.

Course Coverage:

1. Overview of Electronic System/Product Design.
2. Electronic Design Automation Tools.
3. Printed Circuit Boards – Prototypes.
4. PCB Prototyping using the state-of-art Machine (Additive and Subtractive methods).
5. System Assembly Programming and Testing.

Who Can Attend:

Students of B.E/B.Tech, M.E/M.Tech, Research Scholars, Faculty Members and Industrial persons.

Mode of Study:

- ❖ Presentation, Exercises, Sessions of Interaction (Theory & Practical Sessions)
- ❖ No. of Participants Limited to 20
- ❖ Course Duration: 5 days
- ❖ Certificate: Certificates will be provided on successful completion of training

Fee Details (inclusive of GST):

- ❖ Student - Rs. 5,900/-
- ❖ Faculty - Rs. 7,080/-
- ❖ Industry - Rs. 9,440/-

Registration Details:

- ❖ Interested participants have to register for the course by using the application form available in the website.
- ❖ The Minimum and Maximum Number of seats is restricted to 20
- ❖ Refreshment will be provided
- ❖ No accommodation

Intimation to candidates:

- ❖ The training date and expert details will be updated through email/Phone.
- ❖ DD must be taken only after receiving confirmation mail.

Fee Payment Details:

- ❖ The Fee Payment will be in the form of DD only
- ❖ The DD Details will be mailed.

FOR FURTHER CLARIFICATIONS:

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APPLICATION FORM

DETAILED COURSE CONTENT

1. Overview of Electronic System/Product Design

Introduction Overview of Electronic System Design - Analog and Digital Circuits - Microcontroller based system design - Schematic design - Component selection - through-hole, SMT/SMD - PCB Layout - optimization - Design Prototype Enclosure design - LASER Cutting - Rapid prototyping - 3D printing.

2. Electronic Design Automation Tools

Hands on training on the following: Electronic Design Automation Tools (EDA) - Schematic capture - Component Selection - Annotation - Foot print assignment - Wiring - Design Rule Check - Netlist generation - Convert to PCB - Component Placement - Manual Routing - Auto Routing - Gerber file generation.

3. Printed Circuit Boards – Prototypes

Hands on training on different types of PCBs: Single layer - Double layer - Prototyping - Drilling - Laser based Pattern Transfer Laser Etching - Tinning - Green Masking - Laser Legend Printing and the conventional method of making PCBs - Chemical Etching

4. PCB Prototyping using the state-of-art Machines (Additive and Subtractive methods)

PCB Prototyping - Additive and subtractive methods - PCB Printing with conductive ink - V-One - Voltera software - Bot factory SV2 PCB printer - Bantam tools desktop CNC milling machine - PCB Drilling and milling - end mill selection - CAM file generation - LASER based PCB prototyping.

5. System Assembly Programming and Testing

Hands on training on Pick and Place (Fritsch LM901) - Component assembly - wave Soldering - Fluxing - Preheating – Reflow Soldering (5 zone) - Robotic Soldering - Apollo Seiko - Microcontroller Programming - Testing & Troubleshooting - Enclosure Design.

The following machines will be introduced to the participants as they study the Electronic System Design process.

- Maxsell Machine (PCB Printing using LASER Technology (Sources are 40W CO2, 50W IPG, 50W MOPA and 50W RAYCUS))
- Bantam Tools Machine (CNC Milling for PCB Routing and Drilling)
- FRISTCH Machine (Pick and Place of SMD Components in PCBs)
- Reflow Oven Machine for SMD Components Soldering
- Wave soldering Machine for Through Hole Components soldering
- Bot Factory Machine (For Multi-Layer PCB Printing)
- Voltera V-One Machine (For Two Layer PCB Printing)
- Plot Bot and make-block (For Nonmetal laser cutting and engraving)
- Apollo Seiko -Robotic Soldering - 3D Prototyping Dreamer & Formslab - LPKF UV Machine.

