



## **OVERVIEW: Hands-On-Training on PCB Design Using Kicad (Open Source) Software**

### **Why is PCB designing important to students?**

Professionals in PCB design are needed by almost every electronics manufacturer, be it a small-scale industry or an MNC. PCB design is very critical to the performance of the hardware. The mechanical strength and aesthetics of a product also depend on how well the PCB has been designed. With the rapid growth of the embedded systems industry, the demand for good PCB designers is also increasing rapidly.

### **Module 1: Introduction**

Introduction to different types of PCBs  
Familiarisation with electronics components

### **Module 2: Schematic creation**

Understanding schematics and symbols  
Searching components footprints and symbols  
Choosing the right components  
Schematic drawing  
Editing symbol libraries  
Running ERC

### **Module 3: Board creation**

Manual routing  
Component-placing  
Practice via manual routing on PCB  
Design verification  
Designing of single-sided PCB

Using of packaged libraries  
Auto routing  
Editing and creation of components

#### **Module 4: Report generation**

Net list  
Bills of Material (BOM)  
Gerber file creation  
Drill legend generation

#### **Module 5: Fabrication**

Printing of design on copper clad sheet using toner transfer method  
Etching process using FeCl<sub>3</sub>  
Drilling of PCB

**The aim is to make a Pin Through Hole (PTH) PCB below 5MHz using various electronics components, such as ICs, transistors, diodes, passive components, switches and connectors.**

#### **Note:**

1. Course fee is Rs 4,500 + 10.3% service tax = Rs 4,964(including registration, training, reference CD and take away project)
2. Timings for week days are 10:30 AM to 5:30 PM.
3. Timings for weekend classes are:  
Saturday 1.30 PM - 5:30 PM; Sunday 10 AM - 5 PM
4. Students will receive certificates from EFY on successful completion of the course.
5. A CD, which contains the course content, tutorial notes and Kicad software, will be provided at the end of the course.