

PCB Designing and Manufacturing Course

Venue: NCRA, NUST College of E&ME

Min No of participants per batch: 10

Fee per participants: PKR 15,000 *

***[5% discount for group of 5 from one organization, 10% discount for group of 10 from one organization]**

Days	Module	Topics
Day 1	Introduction to Printed circuit board	<ul style="list-style-type: none"> • Fundamental of electronic components like resistor, capacitors inductor , transistor and ICs • Basics of electronic circuits • Basic PCB board (types of PCB board and material) • Introduction of circuit simulation and PCB designing software's. • Standards of PCB manufacturing like IPC standard.
Day 2	Electronic Design automation (EDA) tools for PCB designing	<ul style="list-style-type: none"> • Proteus based circuit designing and simulation • Project building and schematic designing using Altium Software • PCB libraries selection and designing of custom PCB libraries. • Components parametrization • Bill of material generation using schematic file
Day 3	Design Rules for PCBs	<ul style="list-style-type: none"> • Conversion of schematic to PCB • Board Layers stacking based on requirements • Design rule setting • Board layout
Day 4	PCB routing Techniques	<ul style="list-style-type: none"> • Components placement • Net listing • PCB routing

Day 5	Machine readable file generation	<ul style="list-style-type: none"> • Layers pad to pad distance adjustment • Rules adjustment • Design rule check
Day 6	PCB Manufacturing	<ul style="list-style-type: none"> • Assigning text on PCB board • Drill file generation based on the format that require manufacturer. • Introduction to machinery and raw material used for PCB fabrication
Day 7	PCB Fabrication Process and components etching	<ul style="list-style-type: none"> • Concept of PCB fabrication • Introduction to raw material • Introduction to machinery and equipment • PCB Fabrication process (drilling, printing, laminating, exposure developing and etching). • PCB recycling techniques
Day 8	Fundamental Trouble shooting Procedures	<ul style="list-style-type: none"> • Basic Trouble shooting techniques • Response I/V flow in circuits • Reading drawings and diagrams (block, circuit wiring diagrams) • Causes of components failure • PCB Testing and troubleshooting • Current flow test of PCB board • Performance and Testing of components
Day 9	Trouble shooting process	<ul style="list-style-type: none"> • Fault tracing • Fault location • Fault correction • Performance check
Day 10	Fault finding aids	<ul style="list-style-type: none"> • Understanding of oscilloscope, function generator and programmable power supplies. • PCB components placement and foot print verification. • Introduction of PCB assembly • Introduction to automatic soldering

Point of Contact:

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