Subject Code : CCSIE10

CORE COURSE XIII - PCB DESIGN

Unit – I –Layout and Planning.

Layout scale – Grid system – Board types – PCB production facilities – Standards 0– Layout approaches – Documentation.

Realising supply and ground conductors – Component placing and mounting

Unit – II –Design rules for PCB's and Art work.

Printed capacitors and printed inductors – Ground and supply lines – Recommendations for design

Artwork – Introduction – Scale – Basic approaches – Black taping on transparent base foils – General artwork rules.

Unit – III: Automation and Computers in PCB design.

Limitations of manual design – Automatic artwork draughting – Computer aided design – Design automation – Limitations of automation in PCB design. Computer Software for PCB design.

Unit – IV : Laminations.

Properties of copper clad laminates – Manufacturing process – Types of laminates – Phenolic, Epoxy, Polyester laminates – Polymide laminates.

Unit – V : Photo Printing and PCB Technology Trends.

Photoprinting method – Photo resists in general – Screen printing method – Ink printing – Hand screen printing – Immersion plating – Electrodeless plating – Electroplating – Etching using ferric chloride – Cupric chloride – Chromic acid – Alkaline ammonia.

Multilayer boards – Multiwire boards – Principles of solder connections – Solder alloys – Soldering fluxes.

Books for Study:

PCBs Design and Technology – Walter C. Bosshart – Tata McGraw Hill - 1990.