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22EC209 PRINTED CIRCUIT BOARD DESIGN

Hours Per Week :

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0	0	2	1

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PREREQUISITE KNOWLEDGE: Basics of electronic devices.

COURSE DESCRIPTION AND OBJECTIVES:

This is an introduction to PCB design using software. Electronic products need a printed circuit board (PCB), and this program is meant to prepare students to design PCBs up to industrial standards for their own projects.

MODULE-1

PRACTICES:

- Introduction to PCB design flow, materials used and CAD tools.
- Introduction to circuit and layout creation using the software DIPTRACE.
- Design of power supply circuit
- Design of half wave rectifier
- Design of full wave rectifier
- Design clipper circuits
- Design clamper circuits
- Design a RLC resonance circuit

MODULE-2

PRACTICES:

- Design of CE amplifier circuit.
- Design of Op-Amp based inverting and non-inverting amplifiers.
- Design of Op-Amp based waveform generators.
- Design of Adder and Subtractor using digital ICs.
- Design of double layer PCB Design for FM receiver Circuit.
- Understanding Multilayer PCB Design.
- Two Stage RC Coupled Amplifier.
- 10 Watts Audio Amplifier.

COURSE OUTCOMES:

Upon successful completion of this course, students will have the ability to:

CO No.	Course Outcomes	Blooms Level	Module No.	Mapping with POs
1	Understand the PCB designing concepts, materials and apply for making PCB.	Apply	1	1, 2, 3, 5
2	Develop the schematic diagrams for a given circuit.	Apply	1, 2	1, 2, 3, 5
3	Build the PCB for various Electronic Circuits.	Create	1, 2	1, 2, 3, 5

TEXT BOOKS:

- 1. R. Khandpur, "Printed Circuit Boards: Design, Fabrication, and Assembly", McGraw-Hill Electronic Engineering, 2005.
- 2. Clyde F. Coombs, Jr. and Happy T. Holden, "Printed Circuits Handbook", 7th edition, McGraw-Hill Education, 2016.

REFERENCE BOOKS:

1. Boylestad and Nashelsky, "Electronic Devices and Ciruit", 11th edition, Pearson, 2015.

2. Ramakant A. Gayakwad, "Op-amps and Linear Integrated Circuits", 4th edition, Pearson, 2015.

SKILLS:

- ✓ Identify suitable materials for PCB fabrication.
- ✓ Identify PCB type required for specific application.
- ✓ Choose appropriate tool for PCB design.