KALLAM HARANADHAREDDY INSTITUTE OF TECHNOLOGY
(AUTONOMOUS)
(Approved by AICTE, New Delhi; Affiliated to JNTUK, Kakinada)
NH-5, Chowdavaram, GUNTUR-522 019
Accredited by NAAC with 'A' grade
PROGRAMS ACCREDITED BY NBA: B.Tech in CE, ME, EEE, ECE & CSE

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Report on Six-Day Skill Development Training Program on "PCB Design" The Department of **Electrical and Electronics Engineering,** Kallam Haranadhareddy Institute of Technology, Chowdavaram, Guntur, organized a **Six-Day Skill Development Training Program on "**PCB Design**"** from **12th September 2022 to 17th September 2022**.

Organized by: Department of Electrical and Electronics Engineering (EEE)

Resource Person:

Mr. B. Mahidhar

Designation: Trainer cum Developer, APSSDC, Tadepalli, Guntur.

Coordinators:

1. **Dr. P. P. Sharma**
2. **Mr.M.V.N.Murthy**

Topic: Six-Day Workshop on PCB Design

Venue: 1G-07

Date & Duration: 12th September 2022 to 17th September 2022. (Six Days)

Target Audience: III.B.Tech Students

Objectives of the Event:

- Ensure the PCB layout supports the required electronic circuit functionality without errors.
- Design compact boards by efficiently arranging components and routing tracks.
- Maintain proper electrical characteristics (impedance, noise reduction, EMI/EMC compliance).
- Reduce signal loss and interference.
- Design for proper heat dissipation to prevent component damage and improve system reliability.
- Create PCBs that can withstand environmental conditions (temperature, vibration, humidity).

Outcome of the Event:

Student learning outcomes of the workshop and talks include the ability to:

- Ability to design and develop printed circuit boards that meet circuit requirements accurately.
- Proficiency in using PCB design software tools (like Altium, KiCad, Eagle, OrCAD, Proteus, etc.).
- Knowledge of routing, grounding, and component placement for signal integrity and minimal interference.
- Skills to create PCBs that can be easily fabricated and assembled with minimal errors and reduced costs.
- Understanding of heat dissipation techniques and mechanical considerations for long-lasting boards.
- Ability to identify and correct design flaws, improve efficiency, and troubleshoot circuits.
- Preparedness for roles in electronics design, manufacturing, and R&D sectors.

The schedule of tour and places covered as follows.

S. No.	Date & Day	Topics
1	12/09/2022 (Monday)	Basics of printed circuit boards Types of PCBs (single-layer, double-layer, multi-layer, flexible, rigid-flex)
2	13/09/2022 (Tuesday)	Active and passive components Component footprints and libraries
3	14/09/2022 (Thursday)	Creating and interpreting circuit diagrams Netlists and connections
4	15/09/2022 (Thursday)	Component placement strategies Power and ground planes
5	16/09/2022 (Friday)	Design Rule Check (DRC) Signal integrity considerations
6	17/09/2022 (Saturday)	Crosstalk, EMI/EMC, impedance control Board shape, mounting holes, and mechanical constraints

Description / Report on Event:

Department of Electrical and Electronics Engineering have organized a Six day workshop on "PCB Design" in APSSDC lab (1G07). It was conducted for the students of III B. Tech of EEE Branch from **12th September 2022 to 17th September 2022**. A total of 55 students were registered and attended for the event in offline mode. The workshop aimed to design PCB boards the students and an important of PCB in real time applications and The HOD given the detail explanation of department vision and mission to the students.

Dr. L.Shanmukharao, Head of the Department of EEE went onto demonstrate the agenda of workshop. He told how students will be benefited from this workshop on their way to becoming an expert in their field and initiated the event with an inspirational speech.

Mr. B. Mahidhar, Trainer, APSSDC, Vijayawada, Andhra Pradesh, Resource Person of the event congratulated and appreciated the efforts of the students for conducted workshop in the EEE department of KHIT. He told that workshop of benefits specifically targeted for students in order to fill the void and increase the positive experience for students with a token of appreciation from entire EEE department who graced the event with his presence.

Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1: Understand the fundamental concepts of IoT, including architecture, components, and communication protocols.	2	-	-	-	1	2	2	-	-	-	-	2	2	3	2
CO2: Develop skills in designing and implementing IoT applications using sensors, microcontrollers, and cloud platforms.	2	-	1	-	-	2	2	2	2	-	-	2	2	3	2
CO3: Enhance problem-solving and teamwork abilities by working on real-time IoT projects and applications.	2	-	-	-	-	2	-	-	2	3	-	2	2	3	2
AVG	2		1	-	1	2	2	2	2	3	-	2	2	3	2

CONCLUSION

PCB design is a vital process in electronics engineering that ensures the efficient, reliable, and cost-effective realization of electronic circuits. A well-designed PCB not only guarantees proper functionality but also improves signal integrity, thermal management, and manufacturability. By integrating design tools, industry standards, and best practices, PCB design bridges the gap between theoretical circuits and practical hardware. In essence, PCB design is the backbone of modern electronic devices, enabling miniaturization, performance optimization, and long-term durability across various industries.