J.B. INSTITUTE OF ENGINEERING AND TECHNOLOGY

(UGC AUTONOMOUS)

Bhaskar Nagar, Yenkapally Village, Moinabad Mandal, R.R. District, Hyderabad -500075

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

FIVE-WORKSHOP

On

PRINTED CIRCUIT BOARD DESIGN (PCB-DESIGN)

25-10-2024 TO 29-10-2024

Convenor:

Dr. Anindya Jana
Professor ECE

HOD-ECE:

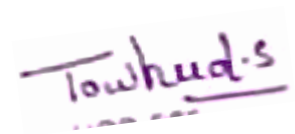**Dr. Towheed Sultana**
Professor ECE

CIRCULAR

This is to inform all II Year-I Semester Students, Department of ECE IETE student chapter is organizing Five-Day Workshop On Hands on "PCB Design" 25th -29th Oct, 2024. Details of the event is provided in the broacher.

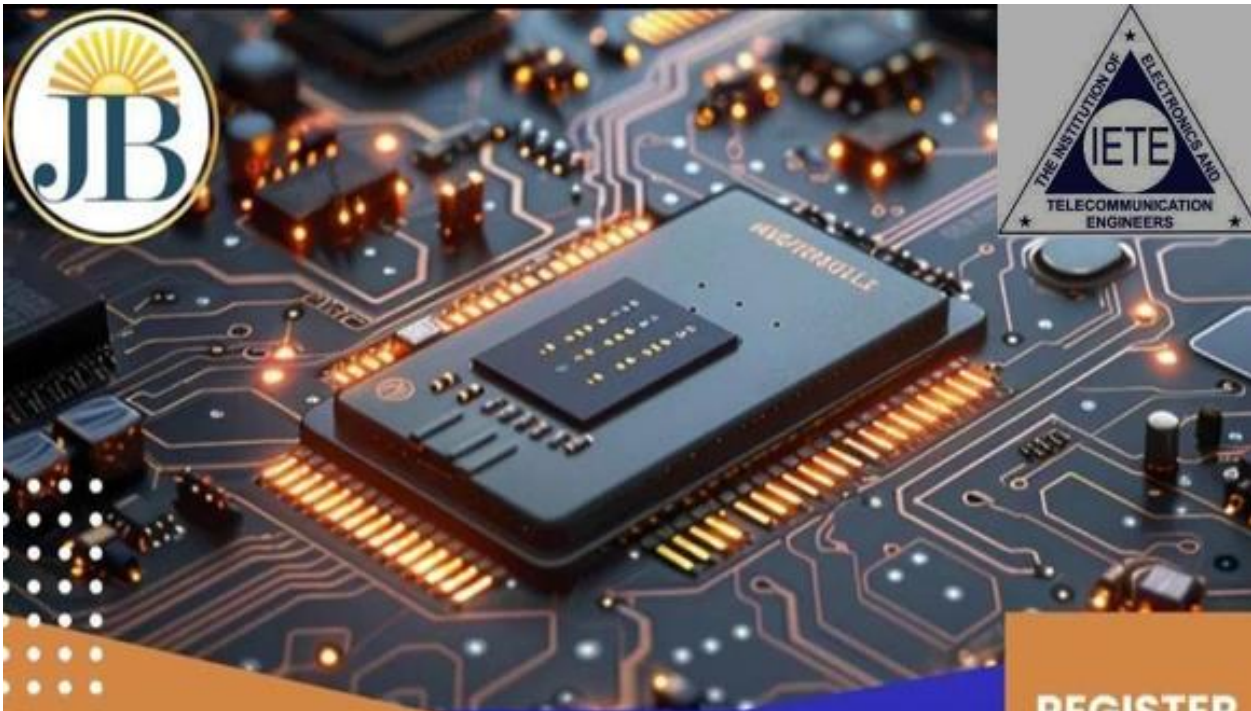For registrations contact Coordinators
Mr. Rajkumar D Bhure

Copy to
1 Principal
2. HODs CSE, ECM, EEE
3. Class -in charges

Coordinators   HOD, ECE

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

FIVE-DAY WORKSHOP (25-10-2024 to 29-10-2024)
On
"PCB WORKSHOP"

Vision of Institute:

To be a center of excellence in Engineering education, research and application of knowledge to benefit society with ethical values.

Mission of Institute:

- To provide world class engineering education, encourage research and Development.

- To evolve innovative applications of technology and develop entrepreneurship.

- To mould the students into socially responsible and capable leaders.

Vision of ECE Department:

To be a guiding force enabling multifarious applications in Electronics and Communications Engineering, promote innovative research in the latest technologies to meet societal needs

Mission of ECE Department:

- To provide and strengthen core competencies among the students through expert training and industry interaction.
- To promote advanced designing and modelling skills to sustain technical development and lifelong learning in ECE.
- To promote social responsibility and ethical values, within and outside the department.

About the Department:

The Department of ECE is best known for its talented and dedicated professionals renowned for their excellence in various specializations in the field of Electronics & Communication Engineering. For the last ten years, the students of ECE, who walked out of the portals of the institute successfully, holding their degrees, were immediately inducted into the MNCs of high reputation in India & abroad. The intake of B. Tech Program is 120 and MTech program in VLSI System Design is 18. Department of ECE is having professional societies like IEEE, Department clubs etc.

About the Workshop:

A PCB (printed circuit board) workshop is a hands-on training session that focuses on teaching participants how to design, fabricate, and assemble their own printed circuit boards. These workshops can be tailored to different skill levels, from beginner to advanced, and may cover a variety of topics such as:

- Introduction to PCB designing

- PCB layout and design rules

- Schematic capture and symbol creation

- Component placement and routing

- Soldering and assembly techniques

Participants in a PCB workshop typically work in small groups, with each group designing and fabricating their own PCB. This provides an opportunity for participants to collaborate and learn from each other, as well as to troubleshoot any issues that arise during the design and fabrication process. Overall, a PCB workshop can be a valuable learning experience in electronics field.

Course Goals:

Understanding the basics of PCB design, participants should gain a fundamental understanding of PCB design principles, including schematic capture, component placement and routing.

- Design and fabrication of a functional PCB: By the end of the workshop, participants should have designed and fabricated a functional PCB that meets the specifications provided.

- Soldering skills: Depending on the focus of the workshop, participants may also gain practical skills in soldering and component assembly.

By achieving these goals, participants should leave the workshop with a solid foundation in PCB design and manufacturing, as well as practical skills that can be applied to future projects.

Report on Four-Day Workshop On

"PCB WORKSHOP"

Five-Day Workshop on **"PCB''** was conducted by the Department of Electronics and Communication Engineering from 25th to 29th October 2024. Mr.VVVS Prasad was the Resource Person. Six Sessions were conducted both theory and practical. The topics covered were Introduction on PCB, Its u s e s and applications. Resource person E n l i g h t e d the students about the scope and opportunities in this field. A quiz was conducted in the last session and feedback was collected. The workshop was concluded with vote of thanks.

Workshop Structure and Execution:

Day-1:

Circuit Design and Implementation:
- The circuit diagrams are designed using with components and connections planned as per the schematic, followed by design verification to ensure accuracy, and the finalized layout is prepared for PCB fabrication.

Schematic Drawing for Component Layout:
- The schematic, based on the dimensions of the components, is drawn on a graph sheet for better clarity and easy understanding.

Transferring the Design to Copper Clad Board:
- The schematic is drawn on a copper clad by placing a carbon sheet on copper clad as per the diagram on the graph sheet.
- The copper clad is painted with white painted with white paint or covered by a sticker, as per the diagram.
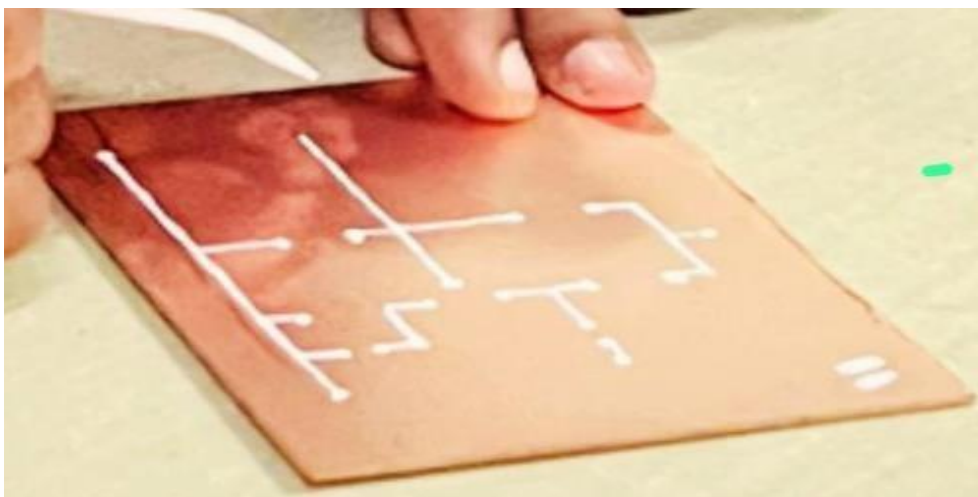
Etching process:
- The copper clad is Etched by a ferric Chloride solution.
- Required quantity of Ferric Chloride is taken in a Tub . Sufficient quantity of water is added to it and stirred well till all the granules are dissolved.
- The painted copper clad after drying is placed in the tub containing $FeCl_3$.
- Care to be taken to use gloves on the hand and use goggles to cover eyes while Etching.

Day-2:

Testing and Troubleshooting:
- Checking for continuity and short circuits.
- Testing with a multimeter and power supply, and debugging and fixing errors are essential steps in troubleshooting electrical systems.

Drilling the Holes
- Holes are made by PCB drilling machine at the appropriate points Where discontinuity is there.

Soldering the Components

- Components are placed on the PCB circuit board and soldered with a soldering Iron.

Final Finishing and Assembly

- The extra leads are cut in order to see that there is no short circuit . The circuit is tested for satisfactory working.
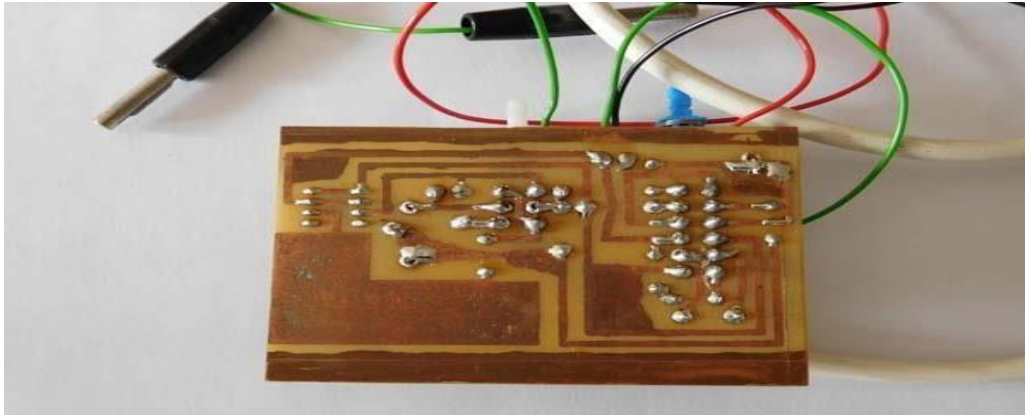
Engaging speeches:

Speech by .Dr. Towheed Sultana

Speech by Mr.Raj Kumar D Bhure

Speech by Mr.VVVS Prasad

Speech by Dr.Anindya Jana

PHOTOS: BATCH-1

Workshop Explanation by Mrs. A.Jyothi Mam

Instructors addressing students

PHOTOS: BATCH-2

Workshop Explanation by Mrs. Supriya

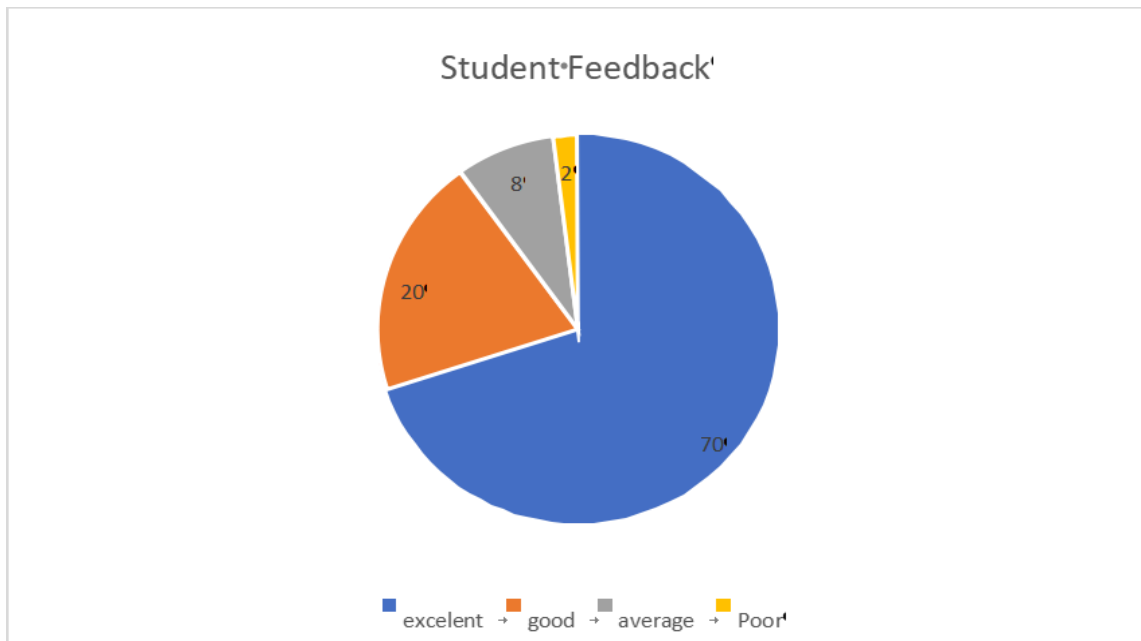**Project explanation by Resource person**

Student Feedback

- excelent 70
- good 20
- average 8
- Poor 2

Resource person: Mr. VVVS Prasad

- The resource person was knowledgeable about this subject
- The resource person managed student's participation well
- The resource person concepts well.
- The resource person encouraged questions and was responsive.
- The resource person feedback and clarification during practice sessions.
- The resource person my overall experience a positive one.
- The resource person advised me of the next class(es) that I should take.
- The resource person recommended the self-paced offering that Compliments this class.
- The resource person gave ideas for further Mini/ Major Projects

PARTICIPANTS LIST: BATCH-1

ECE-A REGISTRATIONS TEAMS

S.NO	NAME	ROLL NO	NAME	ROLL NO	NAME	ROLL NO
1	Ashish Pawar	23671A0406	K.Gangothri	23671A0430	K.Vyshnavi	23671A0433
2	Bingi Pradamesh	23671A0408	Bobbala Vasu	23671A0409	Buggoju Vivek	23671A0413
3	Boini Nagaraju	23671A0411	Cheeti Prakash	23671A0416	G Anuradha	23671A0419
4	Chatla. Anil kumar	23671A0415	Banothu. Gopi	23671A0407	Kairamkonda. Pavan	23671A0424
5	Kavali Dinesh	23671A0426	Kanjarla Manideep	23671A0425	Kotholla Harivardhan	23671A0431
6	Keshagoni Uday Kiran Goud	23671A0428	Arige Sai Vardhan	24675A0413	YALAGANDULA UPENDAR	23671A0454
7	M keerthana	23671A0434	Sneha S	23671A0447	Rithwika Andru	23671A0404
8	Nidhi Sherkhane	23671A0440	Sthitipragyan Pradhan	23671A0448	Kapu Soumya	24675A0401
9	Valeti.Bharath kumar	23671A0452	A.pranay	23671A0403	N.nikhil reddy	23671A0423
10	P.Vaishnavi	23671A0453	R. Jayavardhan	23671A0444	B. Akshaya	2467A0404
11	G.SAI TEJA	24675A0402	D. Akshay Kumar	24675A0405	G.Ravinder	24675A0412
12	E Thejeshwar	24675A0406	D Surya Prakash	24675A0403	K Adhitya Reddy	23671A0427
13	D abhishek	24675A0407	Tulasi Nagendra	23671A051	M ruthvik	23671A0436
14	A.Indhu	24675A0410	B.Sravana laxmi	24675A0409	R.pranaya	23671A0442
15	Mohan nagargoje	23671A0438	K.Shiva sai goud	23671A0429	Akhil rathod	23671A0443
16	N.Padmalatha	23671A0437	G Gangothri	23671A0422	Ramya	23671A0450
17	Abhijeet	23671A0401	Rishwanth	23671A0441	Saroj	23671A0417
18	ch varun	23671A0414	g yashwanth	23671A0421	D Avinash	23671A0418
19	Chidurala Sankeerth	23671A1905	Akiti Likhitha Sree	23671A1901	Kathula Pavan Pardha	23671A1915
20	Jangam Mallikarjun swamy	23671A1913	GHemanth Nitish Kumar	23671A1913	D.Ashrith	23671A1906
21	k.sanajna	23671A1918	G.Anusha Reddy	23671A1907	G.sowmya	23671A1912
22	Mula Sidhartha	23671A1924	Madan Shanker	23671A1921	Okiti Arun	23671A1925
23	Kamanur Venkata Mohan	23671A1917	Vadlamani sashank	23671A1933	Gondlyala Sai keerthana	23671A1911

PARTICIPANTS LIST: BATCH-2

ECE-B REGISTRATIONS TEAMS					
S.NO	NAME	ROLL NO	NAME	ROLL NO	NAME	ROLL NO
1	K.vikas	23671A0477	A.Sai Pranay	23671A0458	K.Rahul	23671A0478
2	Bonthala Sai Deepthi	23671A0466	Gouru Archana	23671A0475	Shivarathri Shyamala	23671A04A0
3	THARUN	23671A0470	Shiva Kiran	24675A0424	Manesh	24675A0425
4	G. Rashmitha	23671A0473	U. Hasini	23671A04A6	D. Radhika	23671A0469
5	K.Varshini Reddy	23671A0479	B.Yamini	23671A0460	R.Sahithi Reddy	23671A0496
6	M.akhila reddy	23671A0483	N.rani	24675A0420	C.Chethana	24675A0422
7	M Pradeep Kumar	23671A0485	Thokala varshath	23671A04A3	D.Mohammed Ali	23671A0471
8	Vaishnavi	23671A0492	Basampapalli Kavyasri	23671A0463	Bethelli Saritha	23671A0464
9	V. Meghana	23671A04A7	T. Kavya	23671A04A5	K. Keerthi	23671A0480
10	Puli yashwanth goud	24675A0414	M. Vishal kumar	24675A0416	M. Bhanu sagar	24675A0421
11	G.mahendar Goud	24675A0417	T.Manohar	23671A04A2	M.Pocharam	24675A0417
12	G. Sai ram	24675A0418	M.Pavan Kumar	24675A0419	D.Ram Chaithanya	24675A0423
13	Rathish Birkula	23671A0465	Arukula Raju	23671A0456	Abhinay Reddy Bandari	23671A0461
14	B Praveen	23671A0459	Kurva Madhu	23671A0481	Anil Kumar	23671A0484
15	Gugulothu.Yak Ub Nayak	23671A0476	Ganla Anuroop Kumar	23671A0474	Nambi. Manikanta Yadav	23671A0490
16	A.shiva prasad	23671A1902	Mallikarjun	23671A1903	Mallikarjun	23671A1932
18	Raushan kumar	23671A1928	Telkar Ravindranath Kunal	23671A1930	Pyaram Sripad	23671A1927
19	P. Yashaswini	23671A1934	M. Yashashwini sri sai vinaya	23671A1922	G. Rasagna	23671A1908
20	Rapolu Sharath kumar	23671A1909	Godugu kumar	23671A1910	Thornali lingareddy	23671A1931