



**PERIYAR
MANIAMMAI**
UNIVERSITY
SARAIKAL
TAMIL NADU
INDIA

PROGRAMME REPORT ON

Value Added Course-PCB Design and Simulation

Resource Person

Ms.Madhumitha T, Embedded Design Engineer, TANCAM, Chennai

Organized by

ECE- PMIST



**PERIYAR
MANIAMMAI**
INSTITUTE OF SCIENCE & TECHNOLOGY
Dindigul - 626 001
Established in 1983, Affiliated to Anna University, Chennai
WISDOM • INTEGRITY • INNOVATION

REPORT ON VALUE ADDED COURSE ON

PCB DESIGN AND SIMULATION

ORGANISED BY

**DEPARTMENT OF ELECTRONICS AND COMMUNICATION
ENGINEERING**

DATE: 06-10-2025 - 10-10-2025

TIME: 08.30 a.m. - 04.10 p.m.

STUDENTS OF II YEAR ECE III SEMESTER

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1. OBJECTIVE

- Introduce the fundamentals of PCB design using KiCad and schematic capture.
- Provide skills in creating custom symbols, footprints, and netlist integration for PCB layout.
- Familiarize students with board outline, layer stack-up, component placement, and routing techniques.
- Develop competency in designing power/ground planes, ensuring signal and power integrity.
- Equip learners with simulation tools for high-speed PCB analysis and fabrication file preparation.
- Enable hands-on design and fabrication of basic circuits, sensor-based applications, and controller boards using Arduino/Raspberry Pi.

2. POSTER



**PERIYAR
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VALUE ADDED COURSE ON **PCB DESIGN AND SIMULATION**

Organized by
**Department of Electronics and
Communication Engineering**

Resource person
Ms. T. Madhumitha
Embedded Design Engineer
M/s. TANCAM, Chennai



06.10.2025 – 10.10.2025

9.00 am – 4.00 pm



Convener

Dr. S. Sankar

Professor & Head
Department of ECE



www.pmiu.ac.in

Coordinator(s)

Ms. S. Ananthapriya

Assistant Professor, ECE

Ms. S. Manju Bharathi

Assistant Professor, ECE

3. COURSE CONTENT

Sl. No.	Course modules	Hours
1.	Design a schematic using KiCad and perform schematic capture for a basic electronic circuit	2
2.	Create component symbols and footprints in KiCad for custom electronic components	3
3.	Generate a netlist and import it into the PCB layout environment for board development	2
4.	Create a board outline and perform layer stack-up for a multi-layer PCB	2
5.	Analyze component placement techniques for optimized PCB layout	2
6.	Evaluate routing strategies and design power/ground planes for signal and power integrity	2
7.	Analyze signal integrity using simulation tools for high-speed PCB designs Fabrication File Generation	2
8.	Design and fabricate a simple voltage regulator circuit	5
9.	Design a PCB integrating a sensor (e.g., temperature sensor) and an LED indicator	5
10.	Design a simple controller board for a for a Boxing Bot Robot using the Reverse Engineering method	5
11.	Project preparation	5

4. SESSION SCHEDULE

Time Slot	Activity
08:30 am – 10:30 am	Hands-on Session I
10:30 am – 10:45 am	Break
10:45 am – 12:45 pm	Hands-on Session II
12:45 pm – 01:45 pm	Lunch Break
01:45 pm – 03:45 pm	Hands-on Session III
03:45 pm – 04:10 pm	Discussion

5. LIST OF STUDENTS ENROLLED

Sl.No.	Register Number	Name
1.	1240120121063	ROHITH S
2.	1240120131140	AAKASH V
3.	1240120131143	ANANTHARUBAN S
4.	1240120131144	ANBALAGAN S
5.	1240120131145	ARUN A
6.	1240120131146	ASARDEEN P
7.	1240120131147	ASWIN J
8.	1240110131150	DHARENI P
9.	1240110131152	DHIVYAKANI M
10.	1240120131153	DHIVYAN K
11.	1240120131155	GOPINATH R
12.	1240120131156	HARIPRASATH S S
13.	1240110131157	HARSHNI A J
14.	1240120131158	HISHAM F
15.	1240110131159	INDUJA S
16.	1240120131160	JAYASURIYA K
17.	1240120131161	JEEVA S
18.	1240110131162	JENIFER G
19.	1240110131164	KALAINILA R
20.	1240110131167	MAGIMA P
21.	1240120131170	MOHAMMED SYIF ALI G
22.	1240120131172	PRAVEEN S S
23.	1240110131173	PRIYADHARSHINI S
24.	1240120131174	RAJARAJAN U
25.	1240120131177	RAKUL S
26.	1240120131178	RANJITH R
27.	1240110131179	RITHIKA S

SLNo	Register Number	Name
28.	1240120131180	RITHISH M
29.	1240120131181	SABARIVASAN D
30.	1240120131182	SAKTHIVEL A
31.	1240120131184	SANTHOSH V
32.	1240120131185	SARAVANA J
33.	1240120131186	SHRI KRISNA S
34.	1240120131187	SIVABHARAN EEDHARAN R
35.	1240120131188	SIVACHANDRAN G
36.	1240120131190	SRIRAM V
37.	1240120131192	SUDHARSAN M
38.	1240120131193	SURIYA PRAKASH G
39.	1240110131196	VIJAYA DHARSHINI D
40.	1240120131197	ALFAYATH IRFAN N
41.	1240120131203	LOKESH SIVA M
42.	1240120131205	MOHANA SUNDHARAM M
43.	1240110131220	LABINAYA
44.	1240120131230	THIRUTAMIL V
45.	1240110131142	AKSHAYA M
46.	1240120131151	DHAYAVARMAN S
47.	1240120131154	GOKULAKANNAN G
48.	1240110131163	JOSHITHA K P
49.	1240120131169	MARVIN M
50.	1240120131171	NAVEED AHAMED S
51.	1240110131175	RAJARAJESHWARI R
52.	1240110131176	RAJESWARI R
53.	1240120131189	SOWMIYA M
54.	1240110131191	SRUTHILAYA A
55.	1240120131199	BALAKUMAR P

SLNo	Register Number	Name
56.	1240120131200	GANESH K
57.	1240120131201	KISHOR T
58.	1240110131204	MANOHARINI V G
59.	1240120131206	MUGUNTHAN S K
60.	1240120131207	NEELAKANDAN S
61.	1240120131208	PERIYAR SELVAN R N
62.	1240120131212	SHAJAHAN M
63.	1240120131214	SRIDHAR R
64.	1240120131215	SRI NIVAS N
65.	1240110131216	SUREKA A
66.	1240120131217	VIISHAL M
67.	1240120131219	YUVARAJ R
68.	1240110131226	SANIYASRI G
69.	1240120131227	VENKATESH S
70.	1240110131229	KIRUBHASHREE S
71.	125012062448	DIHAYABHARAN A
72.	125012062449	KISHORE KUMAR
73.	125012062450	SATHEEQ MOHAMED S
74.	125012062451	SURENTHAR D

6. ATTENDANCE

Sl. No.	Register Number	Name	6.10.2025		7.10.2025		8.10.2025		9.10.2025		10.10.2025	
			FN	AN	FN	AN	FN	AN	FN	AN	FN	AN
1.	1240120121063	ROHITH S	P	P	P	P	P	P	P	P	P	P
2.	1240120131140	AAKASH V	P	P	P	P	P	P	P	P	P	P
3.	1240120131143	ANANTHARUBAN S	P	P	P	P	P	P	P	P	P	P
4.	1240120131144	ANBALAGAN S	P	P	P	P	P	P	P	P	P	P
5.	1240120131145	ARUNA	P	P	P	P	P	P	P	P	P	P
6.	1240120131146	ASARDEEN P	P	P	P	P	P	P	P	P	P	P
7.	1240120131147	ASWIN J	P	P	P	P	P	P	P	P	P	P
8.	1240110131150	DHARINI P	P	P	P	P	P	P	P	P	P	P
9.	1240110131152	DHIVYAKANI M	P	P	P	P	P	P	P	P	P	P
10.	1240120131153	DHIVYAN K	P	P	P	P	P	P	P	P	P	P
11.	1240120131155	GOPINATH R	P	P	P	P	P	P	P	P	P	P
12.	1240120131156	HARIPRASATH S S	P	P	P	P	P	P	AB	AB	P	P
13.	1240110131157	HARSHNI A J	P	P	P	P	P	P	P	P	P	P
14.	1240120131158	HISHAM F	P	P	P	P	P	P	P	P	P	P
15.	1240110131159	INDUJA S	P	P	P	P	P	P	AB	AB	P	P
16.	1240120131160	JAYASURIYA K	P	P	P	P	P	P	P	P	P	P
17.	1240120131161	JEEVA S	P	P	P	P	P	P	P	P	P	P
18.	1240110131162	JENIFER G	P	P	P	P	P	P	P	P	P	P
19.	1240110131164	KALAINILAR	P	P	P	P	P	P	P	P	P	P
20.	1240110131167	MAGIMA P	P	P	P	P	P	P	P	AB	P	P
21.	1240120131170	MOHAMMED SYIF ALI G	P	P	P	P	P	P	P	P	P	P
22.	1240120131172	PRAVEEN S S	P	P	P	P	P	P	P	P	P	P
23.	1240110131173	PRIYADHARSHINI S	P	P	P	P	P	P	P	P	P	P
24.	1240120131174	RAJARAJAN U	P	P	P	P	P	P	P	P	P	P
25.	1240120131177	RAKUL S	P	P	P	P	P	P	P	P	P	P
26.	1240120131178	RANJITH R	P	P	P	P	P	P	P	P	P	P


Co-ordinator
Mr.S.Arinnmurugan
AP/ECE


Co-ordinator
Ms.S.Manju Bharathi
AP/ECE


HOD / ECE
Dr.S.Janani
Professor / ECE
Head of the Department,
Department of Electronics & Communication Engineering,
Polaris Government Institute of Science & Technology,
Bikaner, Rajasthan - 334003

SL No.	Register Number	Name	6.10.2025		7.10.2025		8.10.2025		9.10.2025		10.10.2025	
			FN	AN	FN	AN	FN	AN	FN	AN	FN	AN
27.	1240110131179	RITHIKA S	P	P	P	P	P	AB	P	P	P	P
28.	1240120131180	RITHISH M	P	P	P	P	P	P	P	P	P	P
29.	1240120131181	SABARIVASAN D	P	P	P	P	P	P	P	P	P	P
30.	1240120131182	SAKTHIVELA	P	P	P	P	P	P	P	P	P	P
31.	1240120131184	SANTHOSH V	P	P	P	P	P	P	P	P	P	P
32.	1240120131185	SARAVANA J	P	P	P	P	P	P	P	P	P	P
33.	1240120131186	SHRI KRISNA S	P	P	P	P	P	P	P	P	P	P
34.	1240120131187	SIVABHARANEEDHARAN R	P	P	P	P	P	P	P	P	P	P
35.	1240120131188	SIVACHANDRAN G	P	P	P	P	P	P	P	P	P	P
36.	1240120131190	SRI RAM V	P	P	P	P	P	P	P	P	P	P
37.	1240120131192	SUDHARSAN M	P	P	P	P	P	P	P	P	P	P
38.	1240120131193	SURIYA PRAKASH G	P	P	P	P	P	P	P	P	P	P
39.	1240110131196	VILAYA DHARSHINI D	P	P	P	P	P	P	P	P	P	P
40.	12401201311107	ALFAYATH IREK N	P	P	P	P	P	P	P	P	P	P
41.	1240120131203	LOKESH SIVA M	P	P	P	P	P	P	P	P	P	P
42.	1240120131205	MOHANA SUNDHARAM M	P	P	P	P	P	P	P	P	P	P
43.	1240110131220	LABINAYA	P	P	P	P	P	P	P	P	P	P
44.	1240120131230	THIRUTAMIL V	P	P	P	P	P	P	P	P	P	P
45.	1240110131142	AKSHAYA M	P	P	P	P	P	P	P	P	P	P
46.	1240120131151	DHAYAVARMAN S	P	P	P	P	P	P	P	P	P	P
47.	1240120131154	GOKULAKANNAN G	P	P	AB	AB	P	AB	P	P	P	P
48.	1240110131163	JOSHITHA K P	P	P	P	P	P	P	P	P	P	P
49.	1240120131169	MARVIN M	P	P	P	P	P	P	P	P	P	P
50.	1240120131171	NAVEED AHAMED S	P	P	P	P	AB	AB	AB	AB	P	P
51.	1240110131175	RAJARAJESHWARI R	P	P	P	P	P	P	AB	AB	P	P
52.	1240110131176	RAJESWARI R	P	P	P	P	P	P	P	P	P	P
53.	1240120131189	SOWMIYA M	P	P	P	P	P	P	P	P	P	P
54.	1240110131191	SRUTHILAYA A	AB	AB	P	P	P	P	P	P	P	P
55.	1240120131199	BALAKUMAR P	P	P	P	P	P	AB	P	AB	P	P


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Vile Parle, Mumbai - 400 062

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			FN	AN	FN	AN	FN	AN	FN	AN	FN	AN
56.	1240120131200	GANESH E	P	P	P	P	P	P	P	P	P	P
57.	1240120131201	KISHOR T	P	P	P	P	P	P	P	P	P	P
58.	1240110131204	MANOHARINI V G	P	P	P	P	P	P	P	P	P	AB
59.	1240120131206	MUGUNTHAN S K	P	P	P	P	P	P	P	P	P	P
60.	1240120131207	NEELAKANDAN S	P	P	P	P	P	P	P	P	P	P
61.	1240120131208	PERIYAK SELVAN R N	P	P	P	P	P	P	P	P	P	P
62.	1240120131212	SHAJAHAN M	P	P	P	P	P	P	P	P	P	P
63.	1240120131214	SRIDHAR R	P	P	P	P	P	P	P	P	P	P
64.	1240120131215	SRI NIVAS N	P	P	P	P	P	P	P	P	P	P
65.	1240110131216	SUREKA A	P	P	P	P	P	P	P	P	P	P
66.	1240120131217	VISHAL M	P	P	P	P	P	P	P	P	P	P
67.	1240120131219	YUVARAJ R	P	P	P	P	P	P	P	P	P	P
68.	1240110131226	SANIYASRI G	P	P	P	P	P	P	P	P	P	P
69.	1240120131227	VENKATESH S	P	P	P	P	P	P	P	P	P	P
70.	1240110131229	KIRUBHASHREE S	P	P	P	P	P	P	P	P	P	P
71.	125012062448	DHAYABHARAN A	P	P	P	P	P	P	P	P	P	P
72.	125012062449	KISHORE KUMAR	P	P	P	P	P	P	P	P	P	P
73.	125012062450	SAFEEQ MOHAMED S	P	P	AB	AB	P	P	P	P	P	P
74.	125012062451	SURENTHAR D	P	P	P	P	P	P	P	P	P	P


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AP/ECE


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AP/ECE


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Dr.S.Janani
Professor / ECE
Head of the Department,
Department of Electronics & Communication Engineering,
Karpagam Engineering Institute of Science & Technology,
Kilmer, Tirupur - 641 022

7. SUMMARY

This value-added course provided 74 students with comprehensive, hands-on training in PCB design and simulation using KiCad software.

The intensive sessions successfully blended theoretical fundamentals with practical application, covering the complete design workflow: from schematic capture and custom footprint creation to netlist import, multilayer layout, and signal integrity analysis.

Students successfully applied these skills by designing and simulating various circuits, including a Boxing Bot Robot controller board. This advanced project utilized a Reverse Engineering method and required integration of components like the ESP32 and a Buck Converter.

All students actively interacted and engaged throughout the sessions, including the hands-on practice. The current phase involves students actively competing to develop the most effective designs and presentations for their final projects under the guidance of the trainer.



Day 1: Trainer guide to install KiCad software



Day 1: Trainer explain the tools in KiCad



Day 2: Students active participation



Day 2: Students active participation



Day 3: Trainer give the instructions to students



Day 3: Students active participation



Day 4: Trainer guide the students



Day 4: Students active participation



Day 5: Students prepare the



Day 5: Students prepare the



Day 5: Students present projects



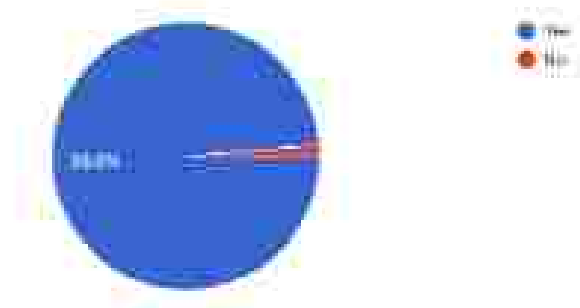
Day 5: Students present projects

8. SAMPLE CERTIFICATES

9. FEEDBACK

The information shared in the sessions met my expectations.

34 responses



The content and hands-on sessions were informative and beneficial. (1 – Poor, 2 – Fair, 3 – Good, 4 – Very Good, 5 – Excellent)

34 responses



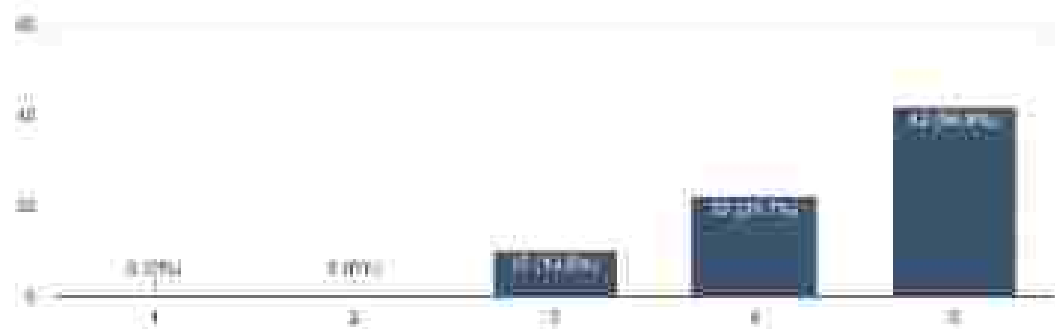
The price and duration of the course were appropriate. (1 – Poor, 2 – Fair, 3 – Good, 4 – Very Good, 5 – Excellent)

34 responses



The course enhanced my practical skills in PCB design and simulation using KiCad. (1 – Poor, 2 – Fair, 3 – Good, 4 – Very Good, 5 – Excellent)

14 responses



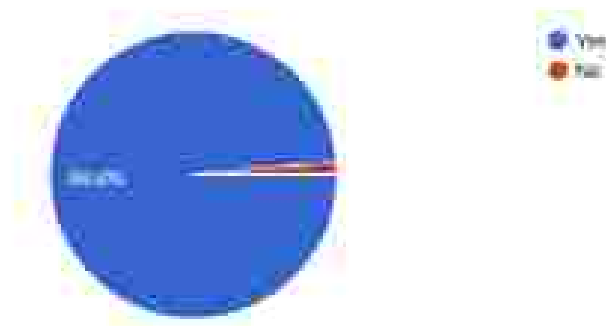
The trainer communication and interaction were effective. (1 – Poor, 2 – Fair, 3 – Good, 4 – Very Good, 5 – Excellent)

14 responses



I am confident to apply the knowledge and skills gained in future projects.

11 responses



10. OUTCOME

After completion of the Value-Added Course, the students are able to

- Students significantly enhanced their technical proficiency in KiCad, achieving mastery and practical execution of the full modern PCB design workflow.
- They successfully designed and simulated various circuits, proving they can translate a theoretical circuit into a functional PCB design.
- They gained experience in designing systems that include advanced components.

11. IMPACT



Co-ordinator
Mr.S.Arannuragan
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Co-ordinator
Ms.S.Manju Bhurathi
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