ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY
Shobhavana Campus, Mijar – 574225, Moodbidri.
Dakshina Kannada Karnataka, India.

Department of Electronics and Communication Engineering

A Report on

PCB Beginner's Certification Program

2017-18

Alva's Institute of Engineering & Technology
Shobhavana Campus, Mijar, Moodbidri, D.K – 574225
Phone: 08258-262725, Fax: 08258-262726
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Ref/AIET/ECE/CC/2017-18/001

From, **Date: 21-08-2017**

Dr. D V Manjunatha
Head of the Department
E & C Engineering
Alva's Institute of Engineering and Technology
Moodbidri.

To,

The Principal
Alva's Institute of Engineering and Technology
Moodbidri.

Respected Sir,

Sub: Requisition for Conducting Certification Course reg:-

With reference to the above subject, we are planning to conduct a certification course for 3rd and 5th Section students on the topic **"PCB Beginner's Course"** by **Oscki Lab, AIET** from 15/09/17 to 12/10/17.

So I kindly request you to grant the permission for conducting the certification course.

Thanking you

Your's faithfully

D.V.

Dr. D V Manjunatha
Head of the Department

H. O. D.
Dept. Of Electronics & Communication
Alva's Institute of Engg. & Technology
Mijar, MOODBIDRI - 574 225

Dr. Peter Fernandes
The Principal
AIET Moodbidri.

PRINCIPAL
Alva's Institute of Engg. & Technology,
Mijar, MOODBIDRI - 574 225, D.K

Alva's Institute of Engineering & Technology
Shobhavana Campus, Mijar, Moodbidri, D.K – 574225
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DEPT. OF ELECTRONICS & COMMUNICATION ENGINEERING

From,

Dr. D V Manjunatha
Head of the Department
E & C Engineering
Alva's Institute of Engineering and Technology
Moodbidri.

To,

Mr. Himanshu Rangadhol
CTO, Oscki Labs.

Respected Sir,

Sub: Invitation for Conducting Certification Course -reg.

With reference to the above subject, we are planning to conduct a certification course for 3rd and 5th Section students on the topic "PCB Beginner's Course" from 15/09/19 to 12/10/19.

So I kindly request you to accept the invitation and enhance the technical knowledge of our students.

Thanking you

Your's faithfully

22-08-2017
Moodbidri

Dr. D V Manjunatha
Head of the Department
H. O. D.
Dept. Of Electronics & Communication
Alva's Institute of Engg. & Technology
Mijar, MOODBIDRI - 574 225

ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY

Dept. of Electronics and Communication Engineering

Certification Course
On

" PCB Beginner Course "

To,

.....

.....

Dept. of Electronics and Communication Engineering

We cordially invite you to the

Certification Course
On

"PCB Beginner Course"

By

Mr.Himanshu Rangadhol
CTO, Oscki Labs
AIET, Mijar

Venue: Internet Lab
Date: 15-09-2017 to 12-10-2017

Mr. Santhosh S
Staff Coordinators

Dr. D V Manjunatha
HOD

About the Institution

Alva's Institute of Engineering & Technology (AIET) is a premier Engineering Institute of Alva's Education Foundation established in the year 2008.

AIET is recognized by All India Council for Technical Education (AICTE), New Delhi and affiliated to Visvesvaraya Technological University (VTU), Belgaum, approved by Govt. of Karnataka. Ranked as one of the best Technical Institute in Dakshina Kannada region. AIET has established Multi-Disciplinary Research Centers viz Center for Robotics, EMS, CAD Center, Linux Lab.

About the Department

Department of Electronics & Communication was started in the year 2008-09. ECE branch is concerned with the design, development, manufacture and application of electronic devices, circuits and systems. It plays great emphasis on deep understanding of fundamental principles and state of the art knowledge about Electronic Devices and Circuits, Computer Architecture and Microprocessors, VLSI and Embedded systems, Electromagnetic Field Theory, Analog and Digital Communication, Digital Signal Processing, Microwave and Broadband Communications, MEMS Research and Development Lab.

Scope of the Course

A Printed Circuit Board (PCB) mechanically supports and electrically connects electronic components. PCB is very important in every electronic gadget and its development holds a major part in electronics industry. The objective of the course is to make students learn all the steps involved in PCB development from basics. The entire course is framed in a way to make it more interactive and creative leaning oriemted.

Course Content

1. Introduction to PCB design tools.
2. Toy building.
3. Designing multiple circuits using PCB.
4. Track and components explanation.
5. Design Rules
6. Creating Gerber file for the circuit.
7. Create own new library.
8. Create a foot print.
9. Final PCB Exam

RESOURSE PERSON

Mr.Himanshu Rangadhol
CTO, Oscki Labs
AIET, Mijar

PROGRAM SCHEDULE

September 15, 16, 18 2017	
Inauguration:	09:00 am to 10:00 am
Tea Break:	10:00 am to 10:30 am
Session 1:	10:30 am to 01:00 pm
Lunch Break:	01:00 pm to 02:00 pm
Session 2:	02:00 pm to 03:30 pm
Tea Break:	03:30 pm to 03:45 pm
Session 3:	03.45 pm to 06:00 pm
September 19,20 2017	
Session 4:	09.30 am to 11:00 am
Tea Break:	11.00 am to 11.20 am
Session 5:	11:20 am to 01:00 pm
Lunch Break:	01:00 pm to 02:00 pm
Session 6:	02:00 pm to 03:30 pm
Tea Break:	03:30 pm to 03:45 pm
Session 7:	03.45 pm to 06:00 pm
September 21, 22 2017	
Session 8:	09.30 am to 11:00 am
Tea Break:	11.00 am to 11.20 am
Session 9:	11:20 am to 01:00 pm
Lunch Break:	01:00 pm to 02:00 pm
Session 10:	02:00 pm to 03:30 pm
Tea Break:	03:30 pm to 03:45 pm
Session 11:	03.45 pm to 06:00 pm
October 9 , 10 ,11,12 2017	
Session 12:	09.30 am to 11:00 am
Tea Break:	11.00 am to 11.20 am
Session 13:	11:20 am to 01:00 pm
Lunch Break:	01:00 pm to 02:00 pm
Session 14:	02:00 pm to 03:30 pm
Tea Break:	03:30 pm to 03:45 pm
Session 15:	03.45 pm to 06:00 pm

Alva's Institute of Engineering & Technology

Shobhavana Campus, Mijar, Moodbidri, D.K – 574225

Phone: 08258-262725, Fax: 08258-26272

Department of Electronics and Communication Engineering

Date: 24-08-2017

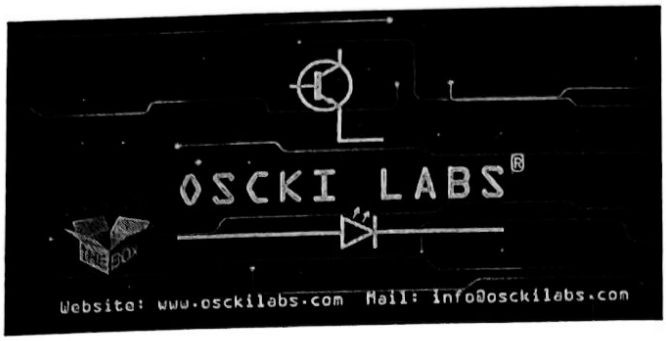
Circular

It is hereby informed to all the students that, the department of ECE is conducting PCB Beginner's course from 15th September 2017 to 12th October 2017. For further details meet the coordinator and interested students can register for the same.

Coordinator
Mr.Santhosh S

HOD
Dr. D V Manjunatha

H. O. D.
Dept. Of Electronics & Communication
Alva's Institute of Engg. & Technology
Mijar, MOODBIDRI - 574 225



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Website: www.osckilabs.com
GSTIN: 29FOTPS5726F1Z3

PCB BEGINNER'S COURSE

REPORT

Venue: Alva's Institute of Engineering and Technology, Shobhavana Campus, Mijar, Moodbidri –574225

Duration: 15th September 2017 to 12th October 2017.

Tool: Ki-Cad

CONTENTS:

1. INTRODUCTION:

The feedback from the Envision Labs members requesting for a certificate course, initiated Oscki Labs to start PCB Beginner's Course. The objective of this course was to make students learn all the steps involved in PCB development from basics. The entire course was framed in a way to make it more interactive and creative learning oriented.

PCB Beginner's course:

A Printed circuit board (PCB) mechanically supports and electrically connects electronic components. PCB is very important in every electronic gadget and its development holds a major part in electronics industry.

There are different software's which can be used for designing the circuits, but the students were trained using the Ki-Cad software because, Ki-Cad is a simple software which can help students learn easily and quickly. During the workshop, students learnt to design their own circuit. Best designs were selected and opportunity was given to few of the student's to etch their circuits.

2. WORK STRUCTURE:

The students from the different branches participated in this workshop.

a. Individual PC's were assigned to the students and personal laptop were also allowed to learn during the course period.
b. The course was conducted only in the evening time. First 50mins was a theory session which concentrated on basics of PCB and process of designing. For the next 1hr, students were asked to work on things learnt during the theory session and design the circuits in the software.
c. The last 10 min was dedicated for open discussion.
d. Assignments was assigned to all the students and marks was awarded based on student's efforts, creativity and design thinking.
e. Final Exam was held on 12th October 2017 and the results was disclosed by 08th November 2017.
f. Those who had shown good progress during the course period got opportunity to develop a mini project in Envision Lab and others who had good attendance and innovative ideas got a chance to work with Envision Lab members on the ongoing prototyping projects.
g. Students who passed the exam were offered Envision Lab membership to work on their ideas.

3. PCB CLASS WORK SHEET:

WORK SHEET			
DATE	MODULES	DETAILS	ASSIGNMENTS
07/09/2017	Introduction	Over view of PCB course	Assignments on PCB Design
08/09/2017	Introduction of PCB	Importance of PCB, designing, basic circuit analysis, basic circuit building and component learning.	
11/09/2017	Circuit simulation	How to choose a component according to the circuit and design a schematic in e-schema. (Control panel tools ,Schematic Editor and Layout Editor)	
12/10/2017	Circuit simulation	Handle the tools according to design a schematic (Design Rules, creating custom components using them in schematics)	
13/09/2017	Foot print allocation	Depending on schematic, allocate the foot print of the components (ERC, Net List generation and annotation methods. Choosing the right components and practical aspects.	
14/09/2017	Discussion	Brief discussion about the previous sessions and doubt clarification.	
15/09/2017	PCB Design tools	Successful completion of foot print to design a circuit in PCB view and learn designing tools.	

16/09/2017	Toy building	Developing the toys using electronic components and how to choose a component of the toy.
18/09/2017	Layer explanation	How to select layer, width based on the requirements and which layers to be chosen.
19/09/2017	Trails of multiple circuits	Designing multiple circuits and figure out the errors.
20/09/2017	Track and components explanation	How to select the track and working of the particular component present in the circuit.
21/09/2017	Design Rules	Once the circuit is finished, check DRC (design rule check) for any error in design.
22/09/2017	Create Gerber file	Complete the circuit, create a Gerber file for the circuit.
09/10/2017	Recall the session	Brainstorming the entire sessions.
10/10/2017	Create own new library	How to create own library depending on the requirements and structure.
11/10/2017	Create a foot print	Once the library is finished, based on the schematic create a foot print
12/10/2017	Final PCB Exam	

4. STUDENTS DETAILS:

Total number of students registered – 80

S.NO	USN	NAME
1	4AL16EC057	Rasika Basagouda Patil
2	4AL16EC060	Rohini Halloli
3	4AL16EC015	Bhuvanesh M
4	4AL15EC016	Challa Meghana
5	4AL15EC048	Mayur Shikhare
6	4AL16EC409	Rakshith B
7	4AL15EC067	Rahul G Itnal
8	4AL16EC052	Rahul Jattennavar
9	4AL16EC054	Ramanath Vishwanath Naik
10	4AL16EC059	Revanth.V
11	4AL15EC008	Ananya.M
12	4AL15EC034	Joel Crasta B
13	4AL16EC064	Sangeetha S V
14	4AL16EC071	Shilpa N
15	4AL16EC093	Vidya L S
16	4AL15EC083	Shruthi I T
17	4AL15EC091	Sushmitha S
18	4AL15EC102	Vinaya Nagesh Naik
19	4AL15EC099	Vasanth Kumar M
20	4AL16EC030	Karthik J
21	4AL16EC078	Srinidhi J C
22	4AL16EC038	Mohith S
23	4AL16EC011	B.S.Nagarakshitha
24	4AL15EC001	A Shreya

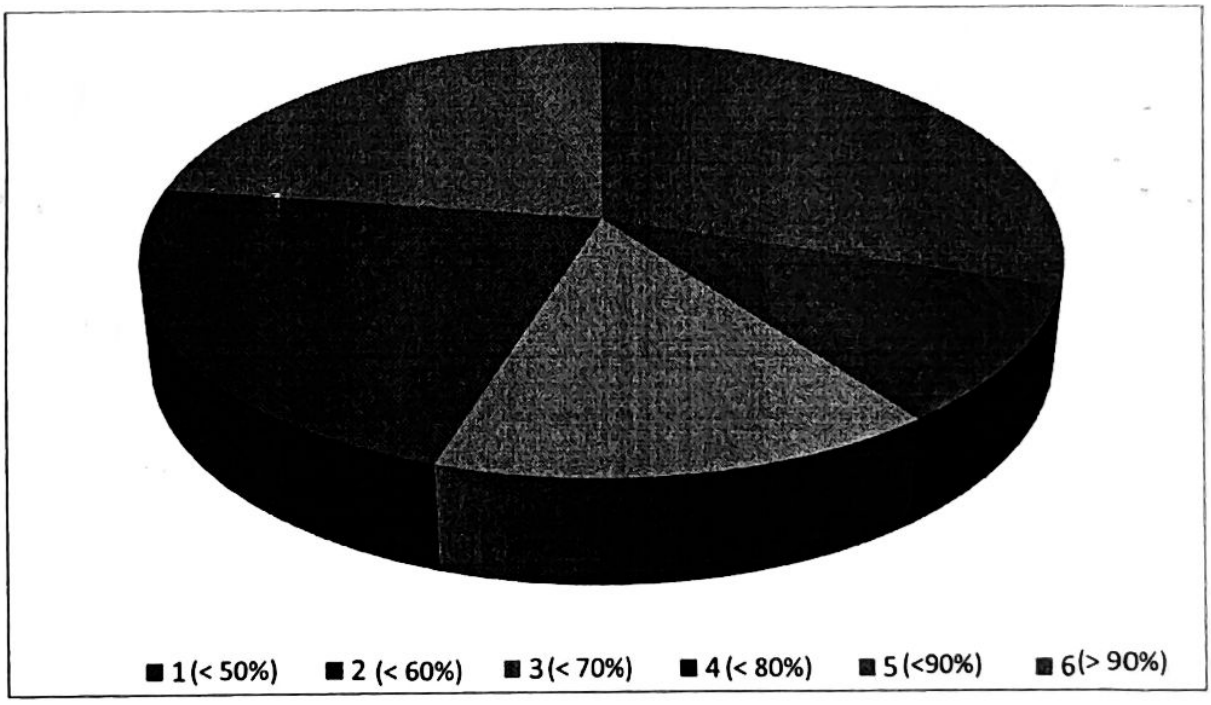
25	4AL16EC077	Soundarya N A
26	4AL15EC017	Charan Raj S
27	4AL15EC057	Pooja M
28	4AL16EC001	Akshatha S Patil
29	LATERAL	Dilip Kumar.V
30	4AL15EC042	MB Chinnappa
31	4AL16EC023	Heema Rubab
32	4AL15EC098	Varshitha P J
33	4AL16EC090	Veena S
34	4AL15EC019	Devika H S
35	4AL16EC017	Chandana.R
36	4AL15EC009	Anjali H R
37	4AL15EC030	Harshitha N P
38	4AL15EC027	Gouthami K
39	4AL15EC018	Deepika N Karanth
40	4AL15EC064	Priyanka
41	4AL15EC049	Monisha P.
42	4AL15EC059	Poojary Manish
43	4AL15EC049	Megha .A .Kadadavar
44	4AL15EC066	Priyanka. H. G
45	4AL15EC065	Priyanka Bangari
46	4AL15EC012	Ashritha
47	4AL15EC004	Akshata Patil
48	4AL16EC404	Kavyashree G.B
49	lateral entry	Bhavya G.B
50	4AL16EC096	Vivek A Bharadwaj

51	4AL16EC022	Gagana M.R.
52	4AL16EC095	Vinayaka B M
53	4AL15EC060	Poonam M G
54	4AL16EC026	Jayanand.J
55	4AL16EC094	Vidya N
56	4AL16EC020	Deepak R
57	4AL16EC049	Priyanka.U.
58	4AL16EC092	Vidhyashree.G.
59	4AL14EC056	Nikkil Aarya M
60	4AL16EC032	Krishna Swetha
61	4AL15EC095	Vanashree
62	4AL16EC042	Nayanashree K S
63	4AL15EC058	Pooja Parameshwar H
64	4AL15EC056	Pavithra.G.K
65	4AL14CS019	Chandana.C
66	4AL16EC063	Samarth Jain N
67	4AL16CV079	Sangamesh S Kajagar
68	4AL16EC083	Thanuja D
69	4AL16CS073	G.Ravi Teja
70	4AL16IS030	Moulya.M
71	4AL16EC056	Rashmi Kb
72	4AL16EC051	Rachana
73	4AL15EC022	Divyashree A K
74	4AL16EC098	Yashaswini.C
75	4AL16EC009	Ashwini.P.Pattar

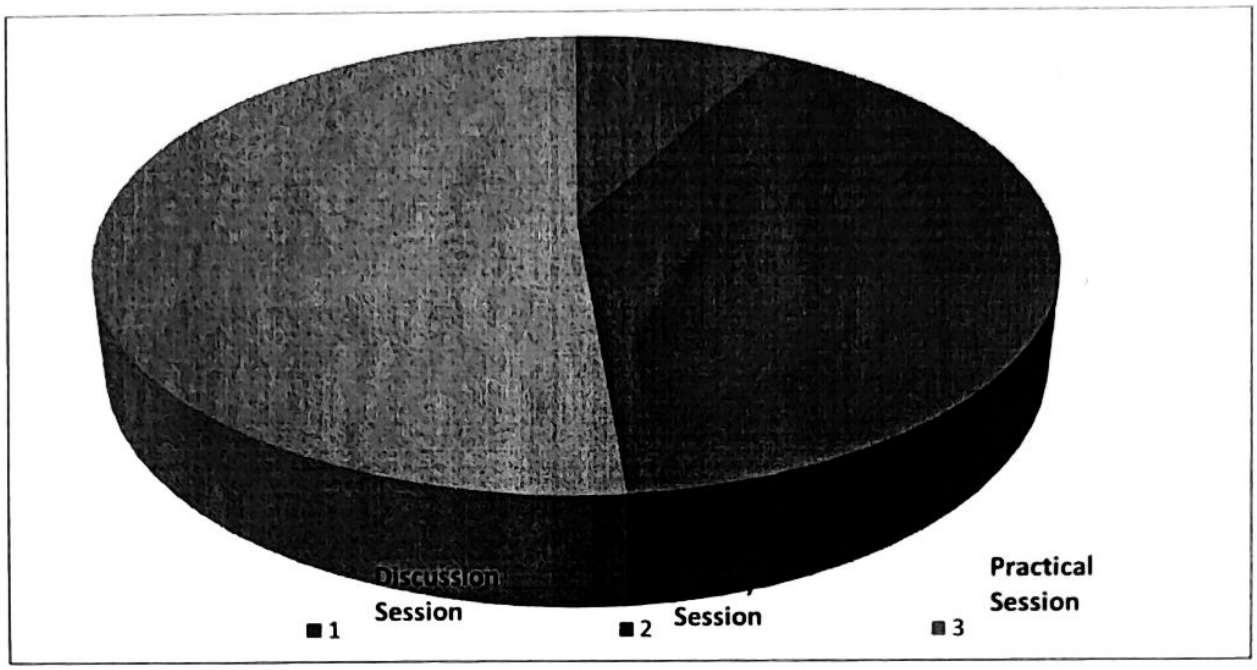
76	4AL16EC402	Ganesh Arasikeri
77	4AL15EC100	Vijay.C.H
78	4AL15EC081	Shivraj Navade
79	4AL16EC002	Anand Kumar.K
80	4AL16EC012	Bhanupriya H K

5. STATISTICS OF COURSE:

Attendance was taken regularly and attendance chart is shown below.

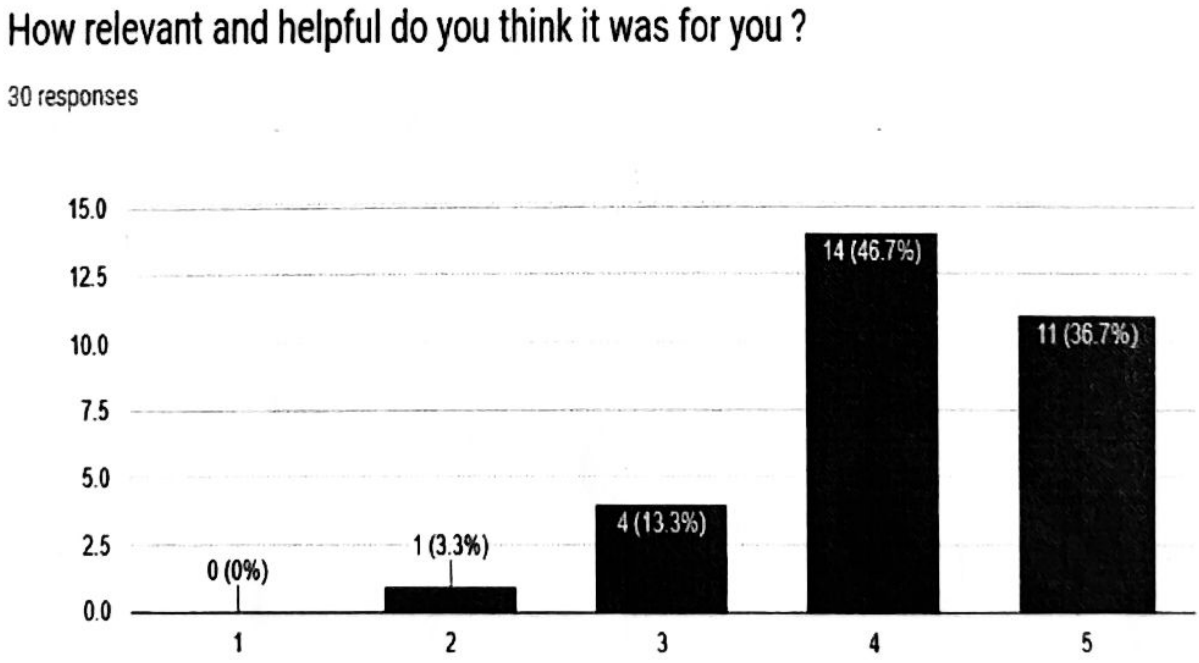


Considering the college timings, the PCB certificate course was drafted for 2 hours a day. Total hours of utilization during the course is mentioned below.



6. STUDENTS FEEDBACK:

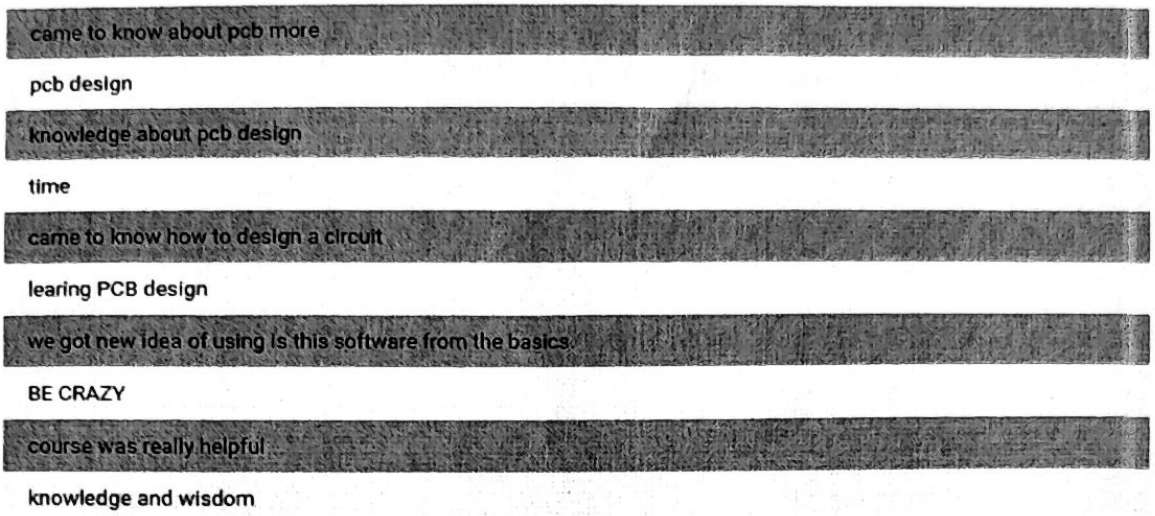
Feedback was collected from few of the students. The students were asked how relevant was the course to their curriculum and helpful for their carrier. Some responses are mentioned below.



Student feedback was collected through online platform. Some of the feedbacks are mentioned below.

What were your key take aways from this event?

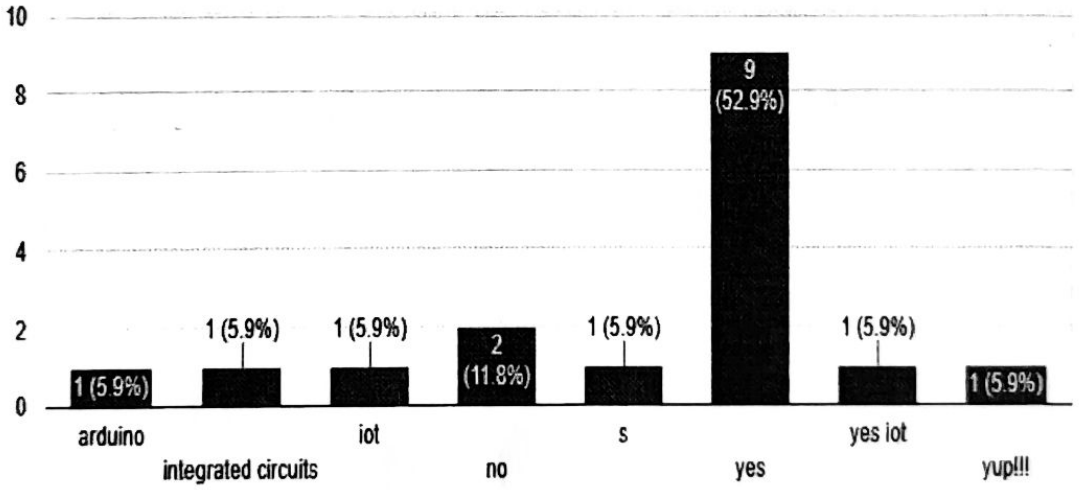
10 responses



Student's feedback was collected about upcoming course on "advanced level of PCB course". Some of the feedbacks for advanced level course are mentioned below.

would you be interested to attend the Advanced Level PCB courses?

17 responses



7. REPORT BY THE INSTRUCTOR'S

a. Report by Mr Himanshu Rangadhol. CTO, Oscki Labs

The whole intention of the structure of this course was to get the students out of the traditional learning methods. Students struggled for few days for this method as there was no notes given and they could search for any answers at any time during the teaching hours on their individual PC's.

The first week was drafted mostly on the learning the basic tools and getting to know the EDA and CAD tools which constitutes the PCB designing. Assignments were challenging and marks was rewarded based in ingenuity and creativity.

Open text book exam was announced and students were allowed to exam halls with any reference text books and it was a whole new level of experience for the students.

The time span for the course was not enough and the time allocated was broken. But still the student's interest and curiosity kept the course going and students have done well the examinations too.

b. Report by Mr Uday. Lead Prototype Developer, Oscki Labs

The aim of this course was to make the student's learn the designing and manufacturing of a printed circuit board using open source Ki-Cad design software. The overall development objective of the workshop was to introduce students to industry level of PCB design. For a technical student apart from there theoretical knowledge, a good practical exposure towards the subject is also essential. This was accomplished through the PCB course.

Initially students experienced difficulty in relating their theoretical concept with practicality with respect to designs, but over the course they were able to cope up. In-between the workshop an assignment was given to students, in which lot of creative designs were witnessed, which indicated every student is an artist. Overall it was a very good worldliness for both trainer and trainee.

Almost 80 students had taken part in the workshop. Most the students responded that they have learned and had hands on experience in designing a PCB. They were very excited about their participation in this workshop and requested for more workshops in similar way so that they can simultaneously gain the practical knowledge. However, with the completion of the workshop students were familiar with PCB Design software (Ki-Cad).

8. RESULTS OF THE PCB EXAMINATION COURSE:

The students had both theory and practical examination (Circuit design). The theory examination was held on 12th October between 5:15PM to 7:15PM and for practical (designing the circuit), the students were given a time period of 1 week starting from 12th October to submit their circuits.

Marks for Theory : 200

Marks for Circuit Design : 300

Marks for Assignment : 150

Total PCB Course Marks : 650

Total Number of Students who registered: 80

Number of Students who took theory exam: 67

Number of Students who passed the exam: 50

Number of Students who have not submitted PCB Design: 15

Number of Students absent for theory and practical exam: 10

Number of students to pay course fee: 3

(1 Student to take exam (NCC Cadet))

(1 Student left the college)

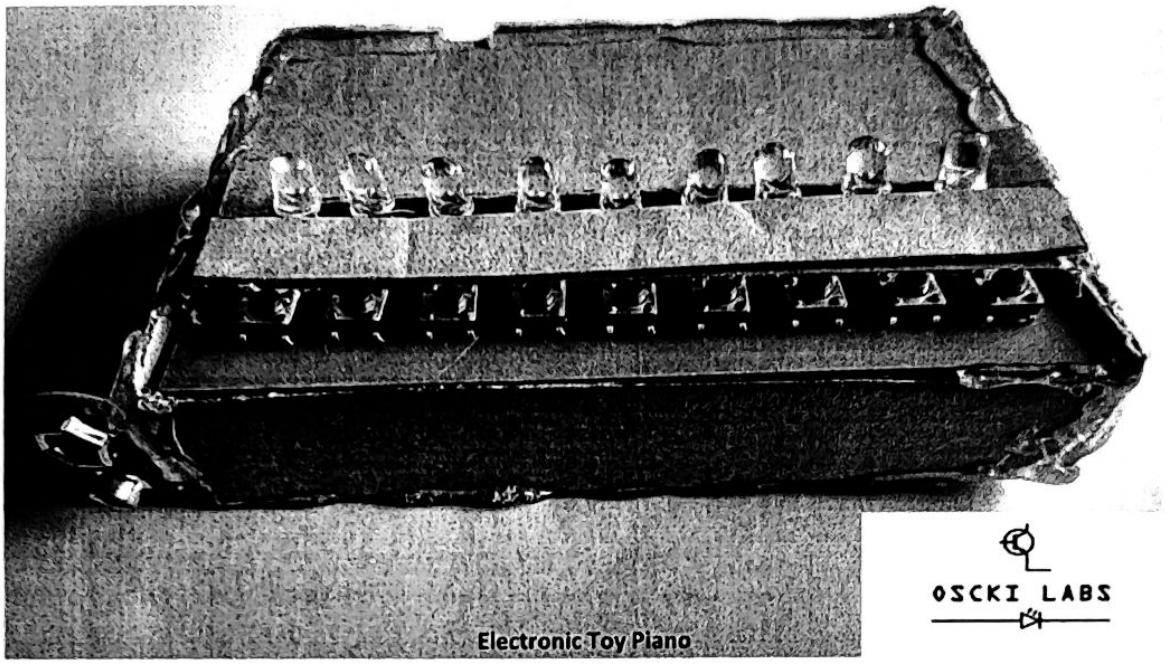
Sl. No	Name	USN	PCB Design	Theory	Assignment	Grand Total	Percentage
1	Gouthami K	4AL15EC027	280	174	135	589	90.61%
2	Nikkil Aarya M	4AL14EC056	265	174	130	569	87.54%
3	Rahul G Itnal	4AL15EC067	265	142	140	547	84.15%

4	Vasanth Kumar M	4AL15EC099	250	172	120	542	83.38%
5	Vivek A Bharadwaj	4AL16EC096	275	121	140	536	82.46%
6	Ananya M	4AL15EC008	270	134	130	534	82.15%
7	Rahul Jattennavar	4AL16EC052	265	147	120	532	81.84%
8	Vidya LS	4AL16EC093	250	150	120	520	80%
9	Yashaswini C	4AL16EC098	235	155	135	515	79.23%
10	Deepika N Karanth	4AL15EC018	255	168	90	513	78.92%
11	Harshitha N P	4AL15EC030	255	154	100	509	78.30%
12	Anjali HR	4AL15EC009	240	166	100	506	77.84%
13	Charan Raj S	4AL15EC017	210	172	120	502	77.23%
14	Ramanath Vishwanath Naik	4AL16EC054	260	101	140	501	77.07%
15	Vinaya Nagesh Naik	4AL15EC102	255	125	120	500	76.92%
16	Vidhyashree G	4AL16EC092	240	140	115	495	76.15%
17	Ashritha	4AL15EC012	230	138	125	493	75.84%
18	Moulya M	4AL16IS030	270	122	90	482	74.15%
19	Chandana C	4AL14CS019	235	144	100	479	73.69%
20	Shruthi I T	4AL15EC083	230	143	100	473	72.76%
21	A Shreya	4AL15EC001	250	112	105	467	71.84%
22	Rohini Halloli	4AL16EC060	263	70	130	463	71.15%
23	Priyanka H G	4AL15EC066	235	109	110	454	69.84%
24	Joel Crasta B	4AL15EC034	260	80	110	450	69.23%
25	MB Chinnappa	4AL15EC042	220	148	80	448	68.92%
26	Bhanupriya H K	4AL16EC012	225	103	120	448	68.92%
27	Srinidhi J C	4AL16EC078	235	126	85	446	68.61%
28	Heema Rubab	4AL16EC023	250	70	125	445	68.46%
29	Chanadana R	4AL16EC017	225	77	140	442	68%
30	Poonam M G	4AL15EC060	235	105	100	440	67.69%
31	Devika H S	4AL15EC019	265	84	90	439	67.53%
32	Vanashree	4AL15EC095	245	115	75	435	66.92%

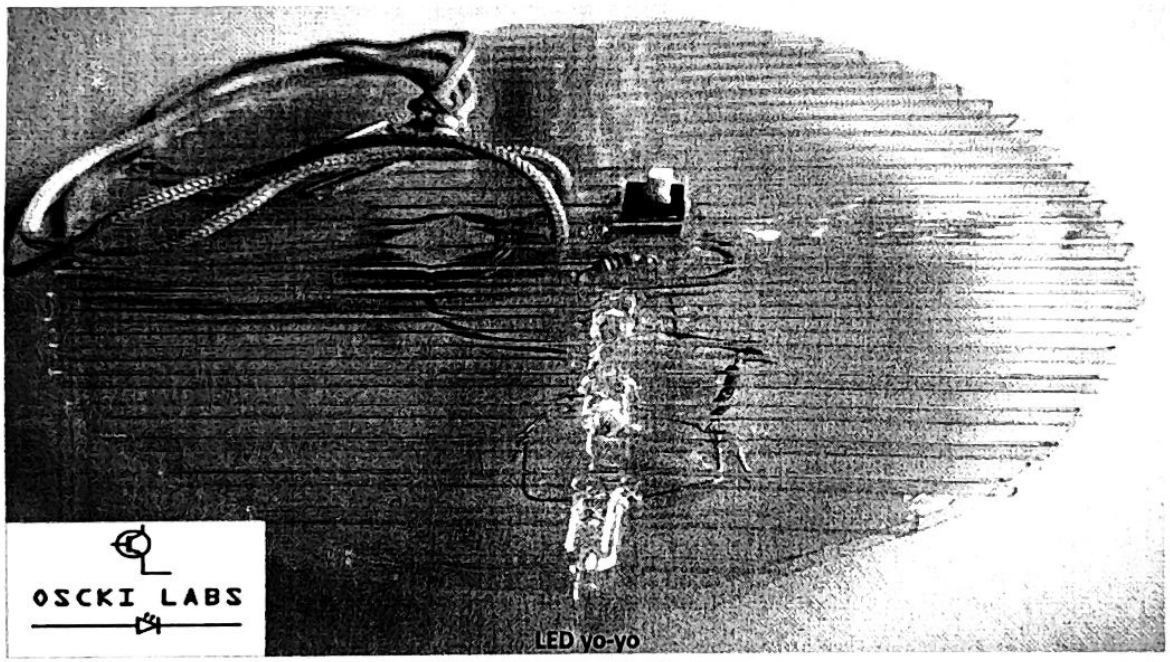
33	Samarth Jain N	4AL16EC063	275	159	0	434	66.76%
34	Sushmitha S	4AL15EC091	215	77	125	417	64.15%
35	Priyanka U	4AL16EC049	230	77	100	407	62.61%
36	Varshitha P J	4AL15EC098	220	82	100	402	61.84%
37	Dilip Kumar V	LATERAL	250	134	0	384	59.07%
38	Nayanashree K S	4AL16EC042	240	134	0	374	57.53%
39	Mayur Shikhare	4AL15EC048	230	111	0	341	52.46%
40	Pooja M	4AL15EC057	220	93	0	313	48.15%
41	Akshatha S Patil	4AL16EC001	190	70	0	260	40%
42	Ganesh Arasikere	4AL16EC402	255	111	100	466	71.69%
43	Vidya N	4AL16EC094	255	132	125	512	78.76%
44	Karthik J	4AL16EC030	245	157	105	507	78%
45	Challa Meghana	4AL15EC016	270	144	135	549	84.46%
46	Poojary Manish	4AL15EC059	196	73	100	369	56.74%
47	Shilpa N	4AL16EC071	213	111	85	409	62.84%
48	Bhuvanesh M	4AL16EC015	209	70	100	379	58.2%
49	B S Nagarakshitha	4AL16EC011	188	55	130	373	57.3%
50	Sangeetha S V	4AL16EC064	255	78	0	333	51.23%

Projects selected for Prototyping:

Few of the projects were selected from the PCB course and are currently under prototyping. The students were selected based on their idea, creativity and their technical knowledge on PCB. The students will be offered to etch their circuits once the prototyping is completed, which will be used in the version 2.0 of their projects. The details of the students and their prototyping projects are shown below:



Electronic Toy Piano

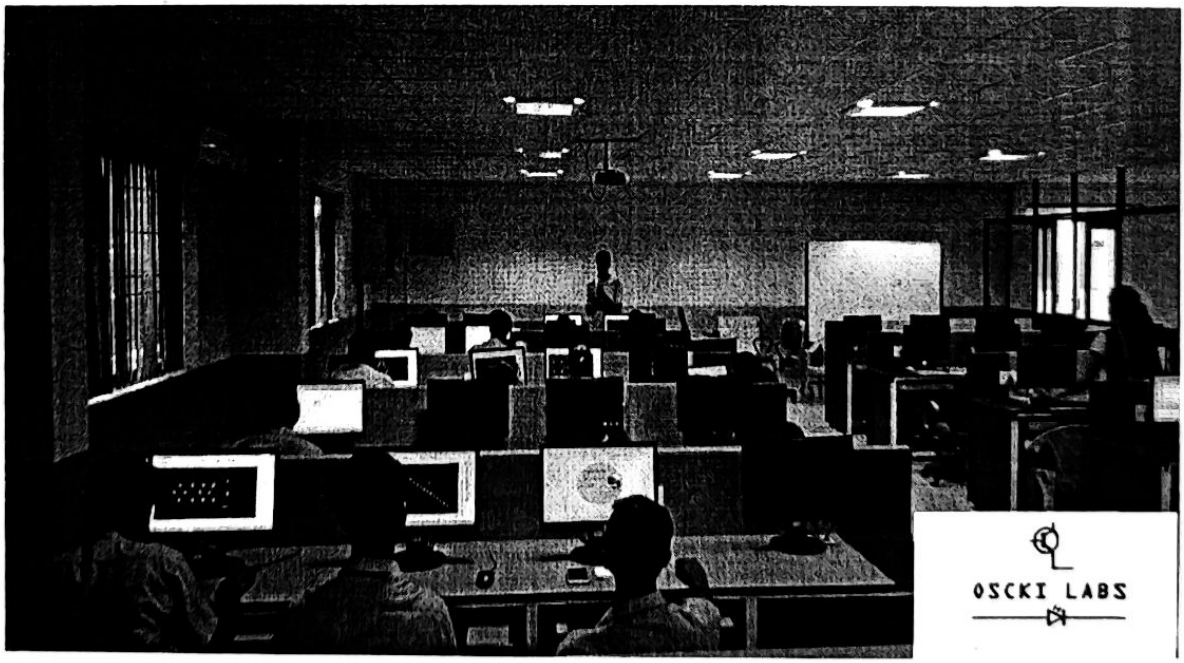


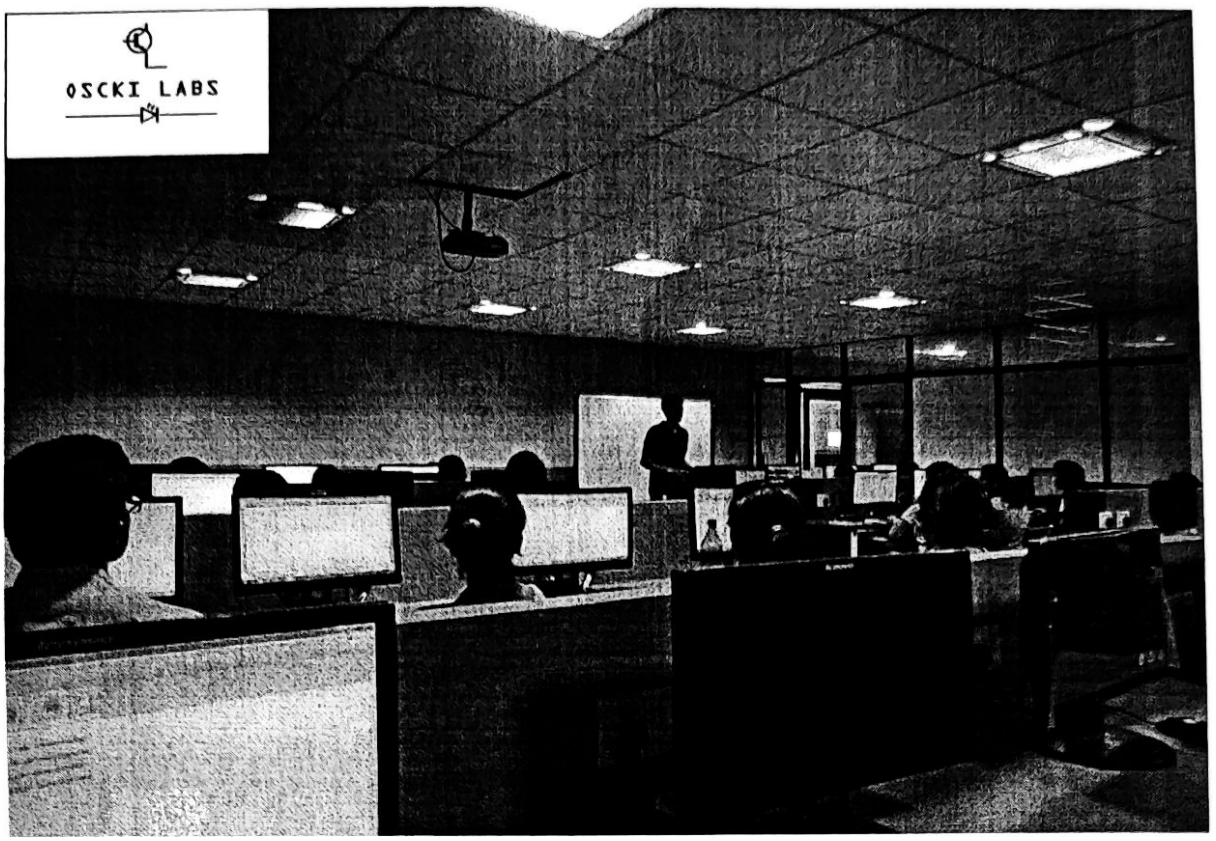
LED yo-yo

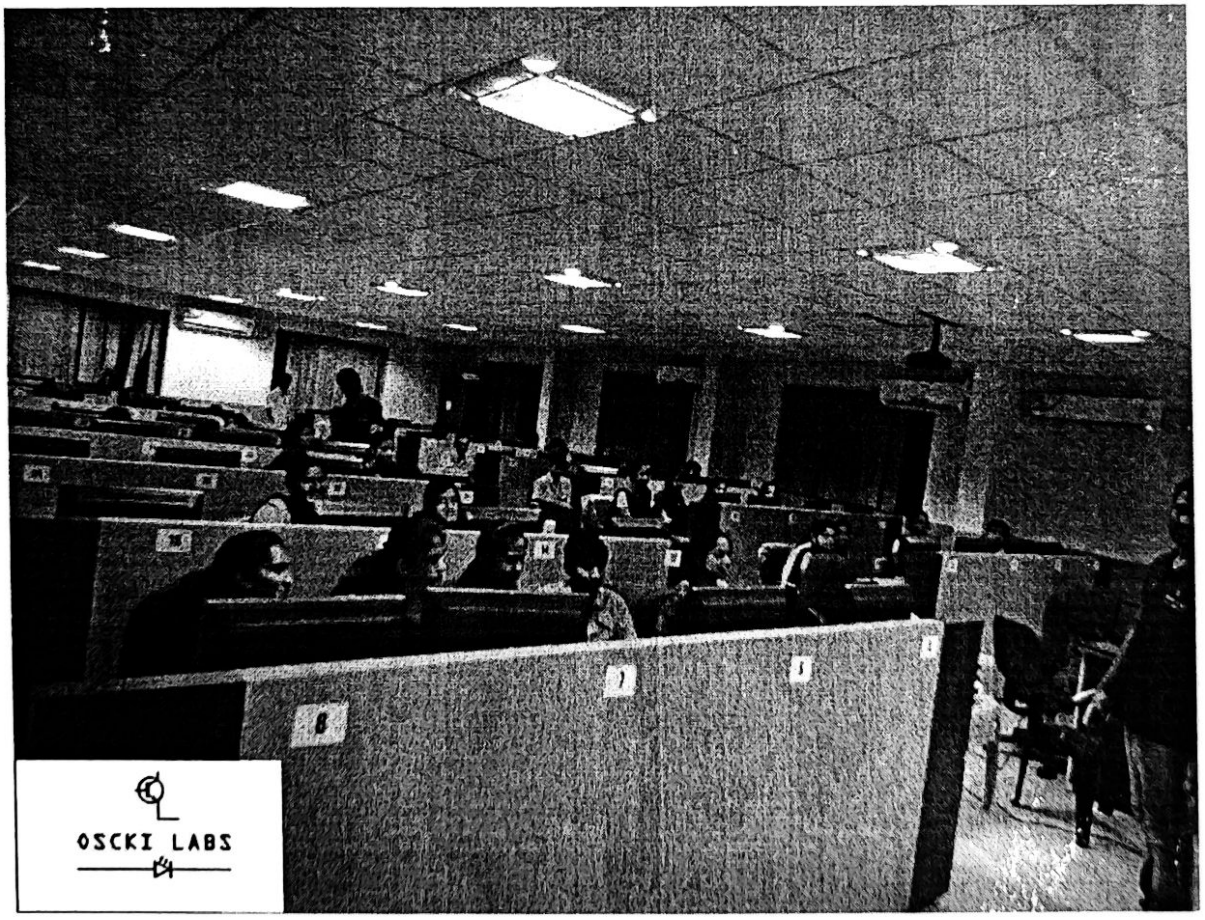
Sl. No	Student Name	Project Name	Project Details	Project Status
1	Vivek A Bharadwaj Ramanath	Electronic Toy Piano	A piano which is developed with electronic	Prototyping under progress

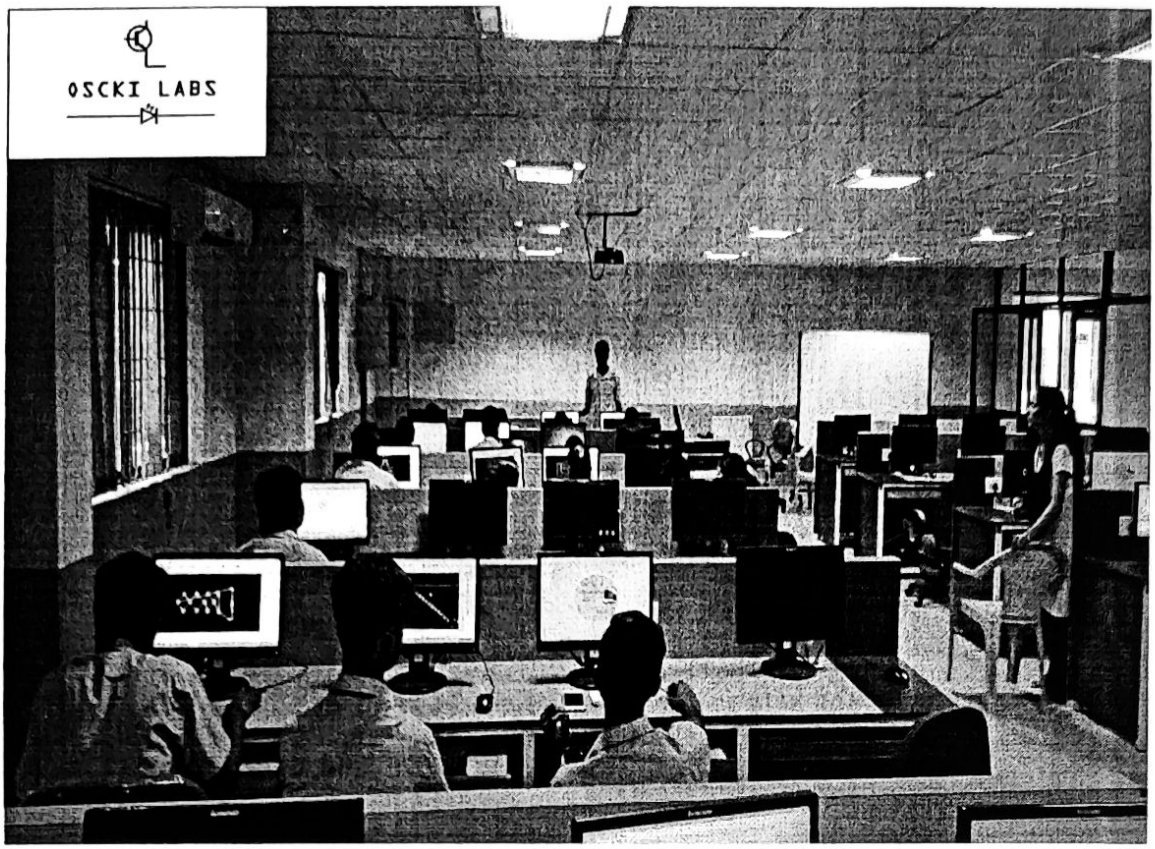
	Vishwanath Naik		components	
2	Karthik J	LED Yo-yo	A yo-yo which has LED's and glows while spinning	Prototyping under progress
3	Vasanth Kumar M	LED Fidget Spinner	This LED fidget spinner which glows LED's while spinning	Prototyping under progress
4	Rahul G Itnal	LED spinning watch	This LED toy watch glows while spinning	Prototyping under progress

Pictures taken during the course period.









10. CONCLUSION:

This PCB certificate course has been a reality only because of continuous support and guidance by Mr.Vivek Alva, Managing Trustee, AEF. We thank all the HOD's and other faculty members who supported us throughout the course. Our special thanks to the networking team for their support in setting up computers for the course. The student's effort and their dedication towards the learning made this course more successful.

Students came up with different designs and were very interested to learn more during the course period. Within 19 days most of the students started designing complex circuits to which, we were able to assess the overall aptitude of a large group of students was higher.

The written feedback from the student's points, suggests for an Intermediate/advanced PCB course in upcoming semester. The intermediate/advanced PCB course will be focussed on multi-layer PCB's, routing, via's and in house etching of a PCB which can help them take forward their ideas for developing own customised boards.

The completion of this course has opened up a new path to the students in the field of PCB and few of them have been selected for prototyping based on their ideas, interest and technical knowledge on PCB to work in Envision Lab. The selected students will be guided to work on their prototype into a real working product and a paper on the same can be published which can provide them a stable platform in their career.

With continuous monitoring and guidance we can strive to help students achieve great heights in the PCB development.

Report made by:

Oscki Labs®

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Department of Electronics & Communication Engineering

Summary Report of Add-on/Certificate program with its Outcomes

Academic Year : 2017-18	**Duration**: 15-09-2017 to 12-10-2017
Title of the Course: PCB Beginner's Course.	
Resource Person: Mr. Himanshu Rangadhol, CTO, Oscki Labs, AIET, Mijar	

The department conducted Certification Course on "PCB Beginner's Course" for 3rd and 5th semester students of Electronics and Communication Engineering from 15-09-2017 to 12-10-2017 by Mr. Himanshu Rangadhol, CTO, Oscki Labs, AIET, Mijar.

78 students of 3rd and 5th semester, Electronics and Communication Engineering are benefitted from this course and were able to

- Understand the basic circuit building and component learning.
- Design the schematic in e-schema.
- Design multiple circuits using PCB.
- Create Gerber file for the circuit..

Dr. D V Manjunatha
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Alva's Institute of Engg. & Technology
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OSCKI LABS®

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IN COLLABORATION WITH

Alva's Education Foundation
Karnataka - India

PROJECT ENVISION

Bridging the gap between
industry and academics

Course Completion Certificate

This is to certify that

Vivek A Bharadwaj

has successfully completed the " *PCB Designing: Beginner's Course* " from 15/9/2017 to 12/10/2017 (30 hours) at Alva's Institute of Engineering & Technology, Mijar, Moodbidiri under Project Envision undertaken by Oscki Labs.

Dr. Peter Fernandes
Principal
AIET, Mijar

Shamanth S
Founder & CEO
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

FEEDBACK FORM

Five days Student Training Program
On

"PCB Beginner Course"

For the following areas, please indicate your rating from 1 to 5:
1=strongly Disagree 2=Disagree 3=neither agree nor disagree 4=Agree 5=strongly Agree

SN	Topics	1	2	3	4	5
A.	Content					
1	Understood the importance of PCB designing.				✓	
2	Able to choose the components according to circuit and design.				✓	
3	Able to allocate the foot print of the components.				✓	
4	Able to track the working of particular component in the circuit.				✓	
5	Able to check the design rule for any error.				✓	
B	Presentation					
6	Instructor's knowledge				✓	
7	Instructor's presentation style				✓	
8	Instructor covered material clearly				✓	
9	Instructor responded well to questions				✓	
10	Instructor facilitated interactions among participants well				✓	

C. How could this workshop be improved?

—

D. Any other comments or suggestions?

—

E. Overall, how would you rate this workshop?

	Poor	✓	Good
	Neither Good Nor Poor		Excellent

Please return this form to the instructor or organizer at the end of the workshop. Thank you