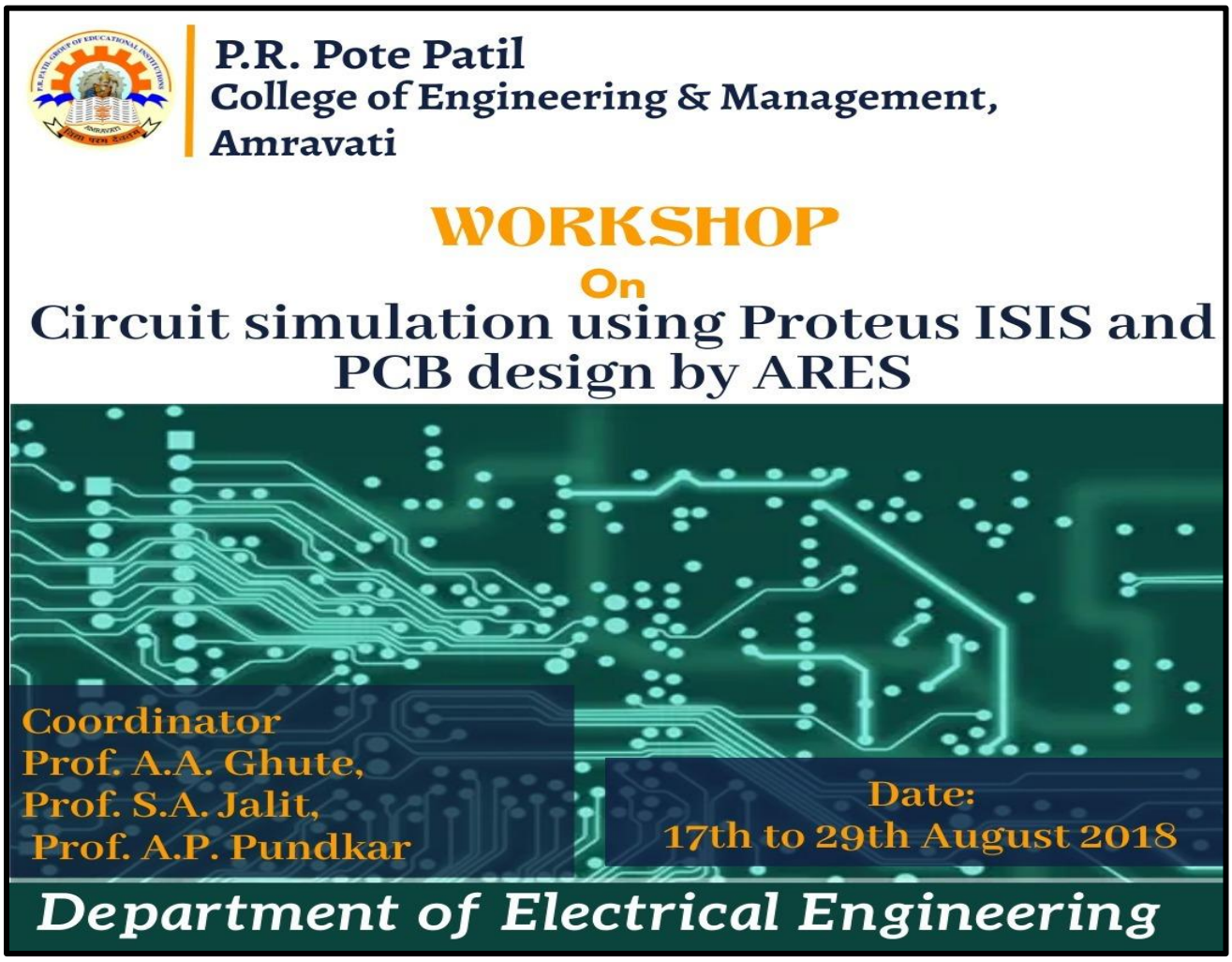
P.R. Pote Patil College of Engineering and Management, Amravati

Department of Electrical engineering

Academic Year 2018-19

Report on

Training Program on circuit simulation and PCB design



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P.R. Pote (Patil) College of Engineering & Management

H.O.D. (Elect. Dept.)
P.R.Pote (Patil) College of Engg. & Management
Amravati.

Name of course: Circuit simulation using Proteus ISIS and PCB design by ARES

Nature of course: Certificate Program

Course Duration: 30 Hours

Career opportunity:

1. Design Engineer –PCB design/Electronics network simulation
2. Become entrepreneur / self employed.
3. Electronics circuit simulation and design.

Objectives of the Course:

The main objective of this workshop was to

- Provide basic knowledge of electronics components,
- Designing and simulation of basic circuits using software Proteus ISIS
- Development of PCB design using ARES software.
- Help students link the theoretical and practical knowledge
- This knowledge will be very useful for the students for their project development

Outcome of workshop: Upon completion of this course, the student will be able to:

1. Identify basic electronics components and there ratings.
2. Perform design and simulate basic electronics circuit in software .
3. Testing of circuit in software.
4. To design PCB in ARES software.
5. Etching of PCB, Drilling, Mounting of components and soldering the components on designed PCB.
6. Testing of fabricated electronics circuit and fault finding

Duration of course : 17th to 29th August 2018

Resource person : Prof A.A.Ghute, Asst.Pofessor, PRPCE &M, Amravati

Prof. S.A. Jalit, Asst.Pofessor, PRPCE &M, Amravati

Prof. A.P. Pundkar, Asst.Pofessor, PRPCE &M, Amravati

Target participants : Electrical Engineering Students.

Course Structure and Syllabus

Department of Electrical Engineering of P. R. Pote Patil College of Engineering and Management, Amravati had organized technical workshop on “Circuit simulation using Proteus ISIS and PCB design

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by ARES", conducted by Prof A.A.Ghute Assistant Professor, Department of EE **for II year** Electrical Engineering students from **17th to 29th August 2018.**

Course Contents:

Sr.No	Duration	Content
1	**2 Hrs**	Introduction of Proteus ISIS and its application to different electrical& electronics circuit.
2	**2 Hrs**	Introduction of and PCB design by ARES and its application to different electrical & electronics circuit.
3	**5 Hrs**	Hands on training of practical simulation of electrical circuit through lab practice in Proteus ISIS.
4	**5 Hrs**	Development of mini projects using Proteus software.
5	**5 Hrs**	Design any type of circuit & simulation using Proteus ISIS and PCB design by ARES.
6	**2 Hrs**	PCB manual etching using etching solution.
7	**2 Hrs**	Drilling and component mounting on PCB.
8	**2 Hrs**	Study of soldering methods and hands on practice.
9	**5 Hrs**	Testing of electronics circuit and understanding fault tracing procedure.

Cos

1. To understand importance of software in circuit simulation and PCB design.

2. Design electrical circuit and analyze the results in software

3.Design the PCB using software and demonstrate the component placement, soldering, etching process.

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO.1	2		3		3							
CO.2	2	3	3		3							
CO.3	2		3		3							
Avg	**2**											

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"Shri Gajanan Maharaj Prasanna"

P. R. Pote Patil Edu. & Welf. Trust's, Group of Institutions,
College of Engineering & Management, Amravati Institute Code : 1107
(Recognized by AICTE, New Delhi, Approved by Govt. of Maharastra & Affiliated to SGBAU, Amravati)

- Kathora Road, Amravati, Maharashtra, India
- Ph. No. : +91-721-2970110, Fax No. : +91-721-2530089, Email : prpotepatilcollege@gmail.com
- Web. : www.prpcem.org, www.prpatilcollege.org

Date: 03/08/2018

Office Order

The undersigned is pleased to appoint the following staff members of Electrical Engineering Department as **Coordinator and Co-coordinator** for Add-on course on ''Circuit simulation using Proteus ISIS and PCB design by ARES'' from **17th to 29th August 2018**. You are therefore expected to take responsibility of coordinating the related activities & cooperate.

Sr No.	Faculty	Responsibility
01	Prof A.A.Ghute	Co-ordinator
02	Prof. S.A. Jalit	Co-coordinator
03	Prof. A.P. Pundkar	Co-coordinator

H.O.D. (Elect. Dept.)
P.R.Pote (Patil) College of Engg. & Management
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Prof. D. A. Shahakar
HOD (EE Dept)

Code-1107

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Department of Electrical Engineering

Academic Year 2018-19

NOTICE

Date: 03/08/2018

All the II Year students of Department of Electrical Engineering are hereby informed that, our department is going to organize Training Program on ‘‘Circuit simulation using Proteus ISIS and PCB design by ARES’’ from 17th to 29th August 2018. All the students are hereby informed that they have to register for the workshop.

Prof. D.A.Shahakar

HOD(EE)

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Snapshots of Workshop

Inauguration of Program

Theory session

Practical session of Program

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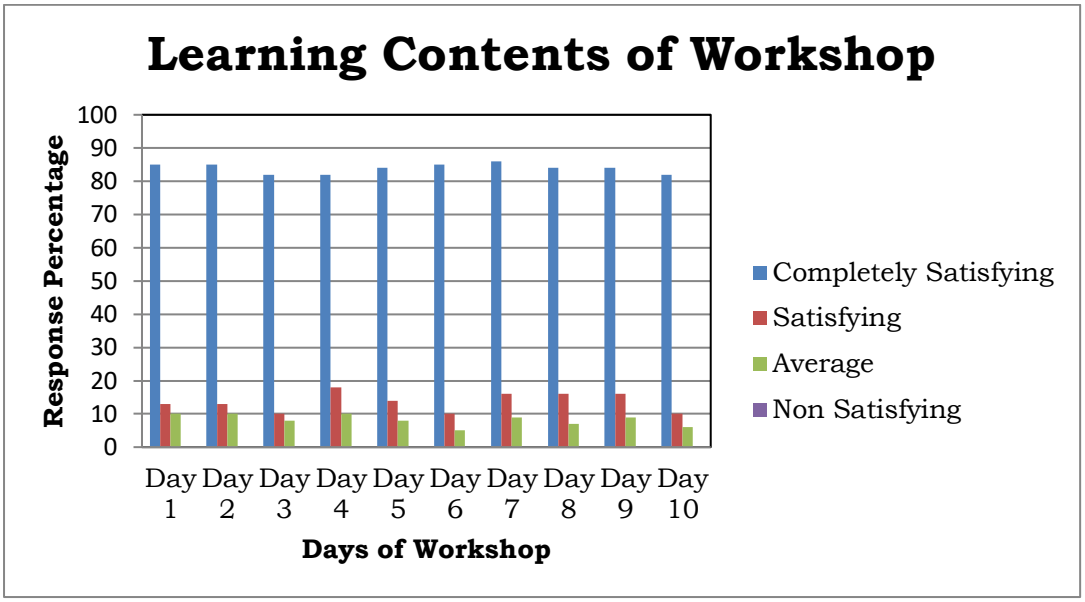
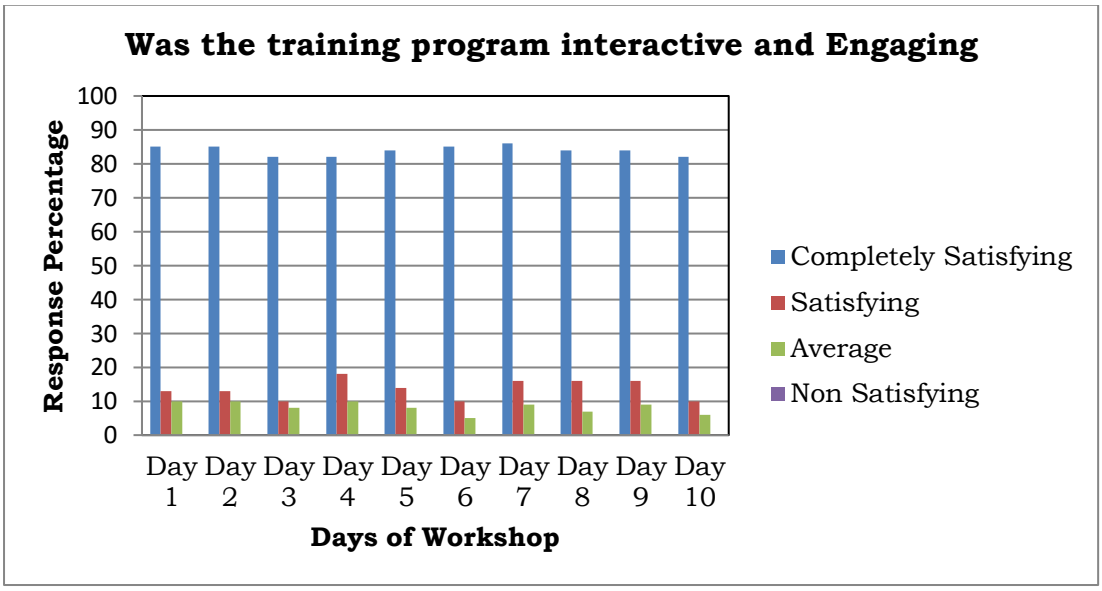
Feedback of workshop





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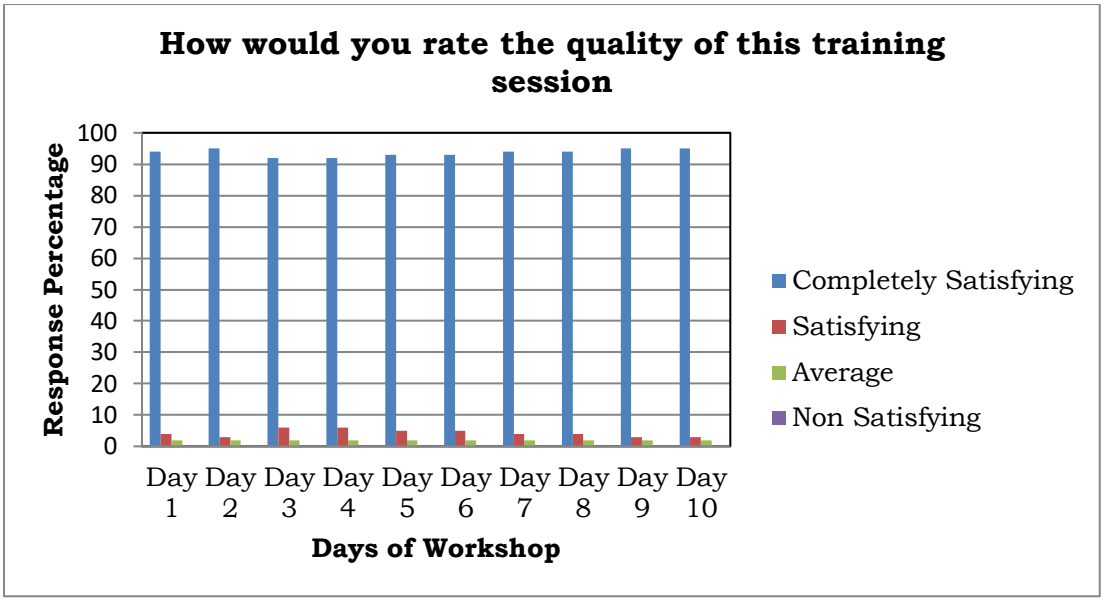

QUIZ

1. Which among the below stated soldering methods is also renowned as 'High Frequency Resistance Soldering'?

a. Iron Soldering

b. Furnace Soldering

c. Torch Soldering

d. Electrical Soldering

2. Which terminology of PCB represents a thin photo-sensitive polymer by supporting photographic pattern of single traces or IC pads for etching?

a. Prepreg

b. Etching

c. Photo-resist

d. Solder mask

3.Which among the below mentioned approaches belongs to the category of In-circuit Testing?

a. Impedance Testing

b. Component Testing

c. Apply Signal and check output

d. All of the above

4. High current circuits are purposely located or placed near the edge of PCB in accordance to the supply lines for _____

a. Removal of heat

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b. Isolation of stray current

c. Reduction of path length

d. All of the above

5. Which among the below mentioned packages does not belong to the category of 'Small Outline Package'?

a) SO

b) SOP

c) SOT

d) SON

6. Which terminology of PCB represents a thin photo-sensitive polymer by supporting photographic pattern of single traces or IC pads for etching?

a) Prepreg

b) Etching

c) Photo-resist

d) Solder mask

7. Which problems are about to occur if PCB is not designed properly in a confined manner for digital circuits?

A. Diffraction

B. Refraction

C. Ground & Supply-line Noise

D. Electromagnetic Interference

a) A & B

b) B & C

c) C & D

d) A, B, C, D

8. Which factors contribute to the occurrence of mechanical stress?

a) Resonance

b) Cracked Solder Joints

c) Both a and b

d) None of the above

9. Which type of PCB requires minimum soldering on component side in order to avoid replacement oriented difficulties?

a) Single-sided PCB

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b) Double-sided PCB

c) Both a and b

d) None of the above

10. What effects can be observed if the separate power and ground planes are provided with large conducting surfaces for better decoupling in PCB layouts?

a) Increase in self-inductance

b) Reduction in self-inductance

c) Stability in self-inductance

d) None of the above

11. Metal surfaces of smaller areas embedded in PCB's are _____?

a) Traces

b) Planes

c) Targets

d) Regions

12. Metals of large areas embedded in PCB are known as _____?

a) Traces

b) Planes

c) Targets

d) Regions

13. Where the components placed on the board are soldered?

a) Traces

b) Planes

c) Metal Pads

d) Regions

14. What ensures pure transmission in PCB design?

a) Traces

b) Planes

c) Metal Pads

d) Dielectric Core

15. Traces and planes utilized in PCB designing comprises of _____?

a) Lead

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b) Copper

c) Silver

d) Titanium

Ans key

1. d, 2.c, 3.d, 4.a, 5.d, 6.c, 7.c, 8.c,9.b, 10.b, 11.a, 12.b,13.c,14.d 15.b

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Quiz Result

Sr. No.	Name	Marks[15]	Sr. No.	Name	Marks[15]
1	Mrunali Darvinrao Charde	12	44	Prjwal Tulshidasrao Kale	13
2	Diksha Uttamrao Waykud	10	45	Prathmesh Pramod Thakare	12
3	Shamali Vinodrao Mavande	12	46	Sumit Lipne	12
4	Sweety Kiran Kasdekar.	11	47	Pratik Gedam	10
5	Samiksha T Deshmukh	09	48	Shahaji Ghuikhedkar	08
6	Pranay Prabhakar Hinge.	09	49	Chandrakishor Bohane	09
7	Kalpak Wardhe	10	50	Aditya lande	11
8	Shraddha Tekade	13	51	Anurag Gajanan Holkar	12
9	Snehal Kadu	12	52	Rahul Rajesh Yawatkar	12
10	Ajinkya Gawande	10	53	Tanmay Diwakar Bodade	11
11	Nikhil Kadu	11	54	Gauri Govindrao Deshmukh	13
12	Ashwini R Damodar	08	55	Ankit Rajesh Punse Roll No	10
13	Monali K Kohale	09	56	Manisha Pundlik Dadmal	09
14	Abhishek E Gadekar	13	57	Radhika motiram Mahalle	11
15	Avinash P Adhawal	12	58	Bhagawati Sunil Goswami	13
16	Sumit P Gote	10	59	Shreyash Ashok Dhawale	12
17	Akash Rathod	13	60	Sarvesh Omprakash Jawarkar	11
18	Rakhi D Goswami	6	61	Adhirath Kohale	11
19	Avanti Deepak Deshpande	09	62	Pratik Ryakar	09
20	Mayur Jadhao	08	63	Yugant P.Chikte	10
21	Pranay Aharwar	11	64	Shrikant S. Ogale	08
22	Darshan Gupta	12	65	Sumit Wankhade	13
23	Monali Tayade	13	66	Ankit Tayade	10
24	Sujay Anil Bobade	12	67	Rushikesh Pimpalkar	09
25	Komal Suresh Chavhan	12	68	Vinay Uike	6

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26	Chaitali Panditrao Raut	10	69	Rushikesh Chore	11
27	Vishakha Sanjay Atkare	09	70	Karan Ahir	12
28	Mrunal Sanjay Sadawarte	09	71	Ashutosh gulaxe	11
29	Sujay Anil Bobade	10	72	Himanshu Paliwal	11
30	Sagar Devidas Jadhao	08	73	Pawan Pokale	08
31	Monali Mundane	12	74	Anurag bisne	09
32	Nayan Garade	7	75	Mansi.G.Kulkarni	13
33	Vaishnavi Pawar	13	76	Sanjana.V.Bhawane	10
34	Vaishnavi Shete	11	77	Neha.F.Rathod	11
35	Ujwal Shende	12	78	Ankita.Kasdekar	08
36	Harshada Sharad Kadu	10	79	Aishawarya.D.Maidankar	09
37	Sakshi Sunil Mohod	11	80	Pratiksha.Shegokar	5
38	Akash Dipak Ingle	09	81	Abhishek Charthal	13
39	Saurav Kishorrao Saykhede	08	82	Sanjana Kushawaha	09
40	Shreyas Sanjay Ghawale	11	83	Sayali Kale	10
41	Suvarna Janardhan Bhople	6	84	Rajeshree Thakare	10
42	Rupali Onkar Warade	4	85	Rutik Shisthe	12
43	Vaishnavi Rameshwar Pandit	11			

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Sample Certificate

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COLLEGE OF ENGINEERING & MANAGEMENT, AMRAVATI

CERTIFICATE

This is to certify that, Mr. Mohit S. Mehare, II Year Stuent of Electrical Engineering Depart,emt has completed Training Program on "Circuit Simulation using Proteus ISIS and PCB design by ARES" organized by Department of Electrical Engineering P. R. Pote (Patil) College of Engineering & Management, Amravati,, during 17/08/2018 to 29/08/2018

Dr. S.B. Warkad
IQAC Coordinator

Dr. S.D. Wakade
Principal

Prof. D.A. Shahakar
HOD, EE

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