



"Shri Gajanan Maharaj Prasanna"

**P. R. Pote Patil Edu. & Welf. Trust's, Group of Institutions,
College of Engineering & Management, Amravati**

Institute Code : 1107

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

Report of Title: **Training Program on circuit simulation and PCB design**

1	Title of Workshop	Circuit simulation using Proteus ISIS and PCB design by ARES
2	Date of Workshop	5 th to 17 th Feb. 2018
3	Venue of Workshop	Electrical Department
4	Resource Person	Prof. A.A. Ghute, Asst. Professor, PRPCE&M, Amravati
5	Target of Students	Electrical Engineering UG
6	Number of Students/Participants	58
7	Schedule of Program	PFA
8	Topics Covered	Day-1- Introduction of Proteus ISIS Day-2- Proteus ISIS and its application to different electrical & electronics circuit Day-3: Introduction of and PCB design by ARES and its application to different electrical & electronics circuit.



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		Day-4 -Developed mini projects using Proteus software
		Day-5- designing any type of circuit & simulation using Proteus ISIS and PCB design by ARES.
		Day-6- PCB manual etching using etching solution
		Day-7- Drilling and component mounting on PCB.
		Day-8- Study of soldering methods and hands on practice
		Day-9 Testing of electronics circuit and understanding fault tracing procedure.
9	Mode Assessment	Question and answering
10	Outcome of workshop/FDP/Seminar /webinar	<ol style="list-style-type: none"> 1. Perform design and simulate basic electronics circuit in software . 2. Testing of circuit in software. 3. To design PCB in ARES software. 4. Etching of PCB, Drilling, Mounting of components and soldering the components on designed PCB. 5. Testing of fabricated electronics circuit and fault finding



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Schedule of Programme

Date	Day	Session	Time	Contents
5/02/2018	Monday	I	2:00pm-5.00pm	Introduction of Proteus ISIS
6/02/2018	Tuesday	I	2:00pm-5.00pm	Proteus ISIS and its application to different electrical& electronics circuit
7/02/2018	Wednesday	I	2:00pm-5.00pm	Introduction of and PCB design by AR and its application to different electrical electronics circuit.
8/02/2018	Thursday	I	2:00pm-5.00pm	Developed mini projects using Proteus software
9/02/2018	Friday	I	2:00pm-5.00pm	designing any type of circuit & simulation using Proteus ISIS and PCB design by ARES.
10/02/2018	Saturday	I	2:00pm-5.00pm	PCB manual etching using etching solution
12/02/2018	Monday	I	2:00pm-5.00pm	Drilling and component mounting on PCB
13/02/2018	Tuesday	I	11.00am-2.00pm 2:30pm-5.30pm	Drilling and component mounting on PCB
14/02/2018	Wednesday	I	2:00pm-5.00pm	Study of soldering methods and hands on practice



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15/02/2018	Thursday	I	2:00pm-5.00pm	Study of soldering methods and hands o practice
16/02/2018	Friday	I	2:00pm-5.00pm	Testing of electronics circuit and understanding fault tracing procedure.
17/02/2018	Saturday	I	2:00pm-5.00pm	Testing of electronics circuit and understanding fault tracing procedure.



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

Department of Electrical engineering

Academic Year 2017-18

Report on

Training Program on circuit simulation and PCB design



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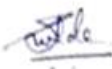
WORKSHOP
On
**Circuit simulation using Proteus
ISIS and PCB design by ARES**

Coordinator
Prof. A.A. Ghute

Date:
05 Feb. to 17 Feb. 2018

Department of Electrical Engineering




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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:

6. Identify basic electronics components and there ratings.
7. Perform design and simulate basic electronics circuit in software .
8. Testing of circuit in software.
9. To design PCB in ARES software.
10. Etching of PCB, Drilling, Mounting of components and soldering the components on designed PCB.
11. Testing of fabricated electronics circuit and fault finding

Duration of course : 5th to 17thFeb. 2018

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

Target participants : **II Yr** 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 by ARES”, conducted by Prof A.A.Ghute Assistant Professor, Department of EE **for II year** Electrical Engineering students from **5th to 17th Feb 2018.**



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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							



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Date: 02/02/2018

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 5th to 17th Feb 2018. You are therefore expected to take responsibility of coordinating the related activities & cooperate.

Sr No.	Faculty	Responsibility
01	Prof.A.A.Ghute	Coordinator
02	Prof.A.P.Pundkar	Co-coordinator

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Prof. D. A. Shahakar
HOD (EE Dept)



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Department of Electrical Engineering

Academic Year 2017-18

NOTICE

Date: 02/02/2018

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 5th to 17th Feb 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



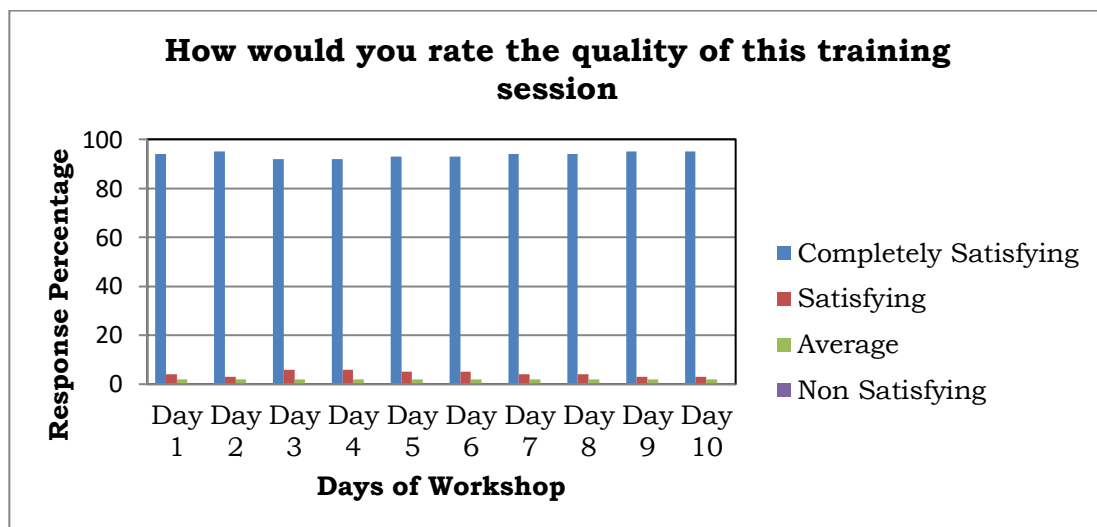
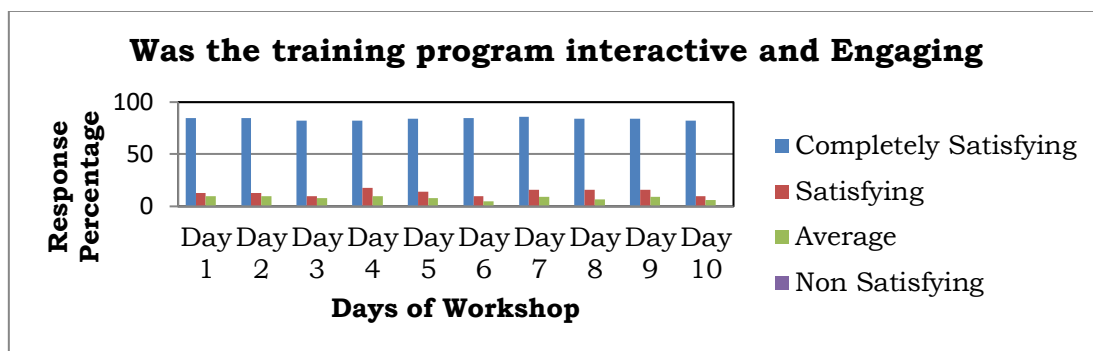
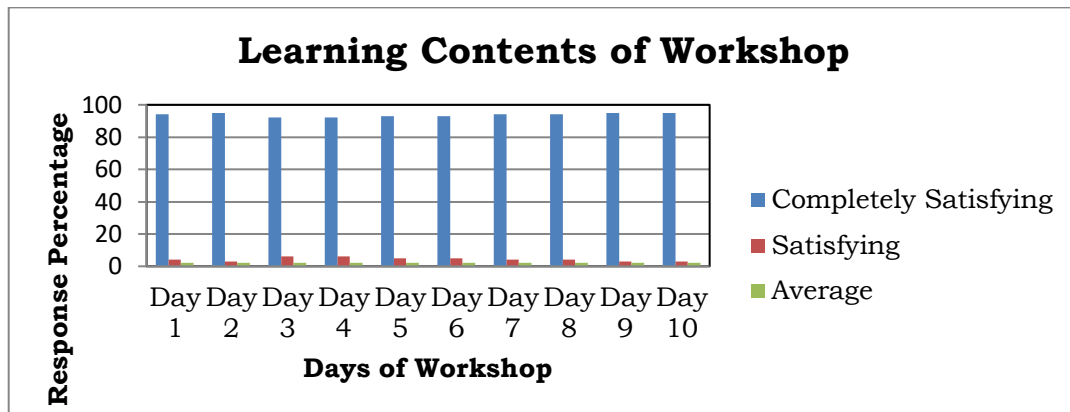
Practical session of Program

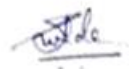


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Feedback of workshop




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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
 - 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?



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- 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
- 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 _____?



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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

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 of student	Marks (15)	Sr. No	Name of student	Marks (15)
1	Rohini K. Deshmukh	12	64	Rani Tadokar	9
2	Priyanka M. Parale	13	65	Shruti D. Khandare	10
3	Vaibhav H. Wakle	10	66	Shubham Tandiye	14
4	Akash V. Kaldate	11	67	Dikshant Kawade	13
5	Amruta S. Chaudhary	12	68	Pratik Ambadkar	12
6	Amruta G. Bhalerao	10	69	Akshay Rajput	05
7	Radhika N. Mendhe	14	70	Nandakishor Madke	10
8	Pranjali P. Bhise	10	71	Yogesh Tantarapale	12
9	Sakshi U. Hande	12	72	Prasad Kharat	14
10	Onam Y. Wghmare	10	73	Ujwal Talkit	13
11	Payal S. Walde	11	74	Amruta Nyakhor	11
12	Sandesh P. Chaudhari	14	75	Alvina Shaha	11
13	Jagdish S. Shinde	13	76	Mandar Pathak	10
14	Swapnil B. Ramteke	10	77	Sonam Chikhalkar	10
15	Ashwin Y. Gahane	14	78	Rasika Jagtap	9
16	Gaurav S. Zopate	13	79	Vrusha Ahirao	9
17	Tushar K. Kuyate	14	80	Rushikesh Sabal	06
18	Madhvi K. Ingle	04	81	Tejas Khairkar	10
19	Neha L. Neware	9	82	Bhagyashree lande	11
20	Monika V. Ghatol	10	83	Shabdali Mule	12
21	Asha P. Bodkhe	9	84	Abhijeet Nimkar	11
22	Vasanti A. Opase	12	85	Gitesh Sable	10
23	Snehal M. Wanare	13	86	Anurag Bhoyar	11
24	Pallavi R. Rajgure	11	87	Makarand Bhamburkar	13
25	MD. Umer Moh Iqbal	10	88	Shubham Khodke	12
26	Harsh N. Dhawale	10	89	Akshay Wankhade	04



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27	Yash S. Malthane	9	90	Amit Pande	11
28	Sanghadip R. Wasnik	13	91	Anant Kuryawanshi	12
29	Charudatta K. Wakudkar	8	92	Prasad Kathalkar	11
30	Kamesh M. Thakre	12	93	Abhishek Khedkar	13
31	Nikhil S. Dharme	11	94	Ankit Deshmukh	13
32	Nishikant J. Kale	10	95	Neha Bendarkar	12
33	Ameya N. Adsule	12	96	Rajesh Giri	11
34	Vicky P. Gaikwad	10	97	Rushikesh Bhakte	10
35	Prashant S. Umkar	11	98	Yash Dharmale	11
36	Shubham S. Wankhade	11	99	Pratik Ingle	13
37	Abhay S. Gedam	12	100	Monali Tayade	13
38	Omkareshwari B. Khupse	09	101	Mayuri waghmare	11
39	Pooja K. Kamble	10	102	Pooja Garode	10
40	Rupesh V. Aagde	11	103	Harshal Ingalkar	13
41	Himanshu S. Umale	12	104	Kartik Yawale	12
42	Akansha A. Shrisath	05	105	Abhishek Pandey	11
43	Sonali D. Kalaskar	10	106	Revati Ganorkar	9
44	Rahul V. Manekar	10	107	Shrutika Dharamthok	12
45	Rushikesh M. Gujarkar	9	108	Pratiksha Dahake	12
46	Aman A. Deole	12	109	Rinkal chandanshive	11
47	Kalyani P. Kawane	12	110	Mayur Borkhade	11
48	Jigisha P. Hirpurkar	11	111	Gaurav Hivase	9
49	Arpit R. Wardhe	11	112	Aditya Meshram	10
50	Prathamesh V. Aherkar	9	113	Rohit Kanhe	11
51	Vaibhav Dhakare	10	114	Pranjal Dubey	11
52	Shatakshi R. Guhe	11	115	Prathamesh Kakad	09
53	Dhanashree Pohokar	11	116	Akash Bhuyar	10
54	Shrutika V. Dabhale	11	117	Dushant Girde	10
55	Pooja S. Kamble	13	118	Aditya Kolamakar	9



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56	Mayuri D. Kapse	10	119	Harshal Bodkhe	12
57	Sapna L. Kale	10	120	Snehal Deshmukh	12
58	Samiksha R. Gathe	9	121	Pragati Solanke	11
59	Bhagyashri S. Kale	12	122	Tejaswani Hambarde	11
60	Vaibhav Indurkar	12	123	Manish Pawade	9
61	Omkesb Karale	11	124	Krishna R. Shane	10
62	Sugat Raibole	11	125	Prachi Waghawe	11
63	Pranjali Dike	9			11



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Sample Certificate



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CERTIFICATE

This is to certify that, Ms. Monika V. Ghatol, II Year Student of Electrical Engineering Department 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 05/02/2018 to 17/02/2018

Dr. S.B. Warkad
IQAC Coordinator

Dr. S.D. Wakade
Principal


Prof. D.A. Shahakar
HOD, EE



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