



RAO PAHLAD SINGH COLLEGE OF ENGG. & TECH.

Approved by AICTE / Govt. of India & Affiliated to I.G.U., Meerpur

Balana, Mohinder Garh, Haryana - 123029

Telephone: 01285-241431 Fax: 241434

E-mail: rpsbalana@gmail.com, Website: www.rpsinstitutions.org

NOTICE

Date: 11/05/23

It is to hereby inform that the Department of Electrical Engineering is organizing a 4-weeks In-house training commencing from 19th June, 2023 for the students of Electrical Engineering and Electronics & Communication Engineering going to the 3rd semester during the time interval before the commencement of the new session.

The training fee will be Rs 300/- per student, which is required so as to buy the various components to be used during the training.

Salient Features:

- Working with the various types of switches: toggle switch, pushbutton, selector switch and thumbwheel switch.
- Use and implementing the various sensors such as LDR, IR, LM35 temperature sensor, and MIC condenser.
- Working with the actuators such as relays, opto-couplers, transistors, TRIACs.
- Working with the various ICs: voltage regulators, OpAmp, timer IC, Flip-Flops, decoders, motor drivers.
- Working with the joystick module, RF module and seven-segment display.
- Getting familiarized with the circuit simulating software: Proteus and PCB layout designing software: ExpressPCB, and PCB etching and soldering.
- Working on projects to have hands-on experience with the aforementioned components.

For more details, please contact the undersigned.

Faculty Coordinator

Er. Vishal Kumar Mittal
(Asstt. Prof. Electrical Engineering)

HOD (E.E.) RPS College of Engg. & Technology, Balana, Mohinder Garh (Haryana)-123029

Er. Karambir Sheoran
Electrical Engineering Deptt.



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In-House Training Outcomes and Curriculum

Training Outcomes:

After successfully completing the training, the students will be able to

1. implement the sensors such as LDR, temperature sensor LM35, condenser MIC and IR sensor in real life projects.
2. use the various types of switches such as Toggle switches: SPST, SPDT and DPDT, Pushbuttons, Selector switches and Thumbwheel switches in real life projects.
3. use the various actuators based on the need such as Relays: SPDT and DPDT, Optocoupler: PC817, Transistor: BC547, TRIAC: BT136 and Photo-TRIAC.
4. work on modules such as RF module, Joystick module and seven-segment display.
5. work with ICs such as Voltage Regulators: 7805, 7809, 7812; 555 timer IC; OpAmp 741 IC as analog comparator; Flip-Flop-7476 (JK); 7447 BCD to seven-segment decoder; L293D motor driver.
6. use the circuit design and simulation software Proteus 8.12, PCB Layout designing software ExpressPCB, and PCB Etching and soldering.

CURRICULUM

S. No.	DAY	CONTENT
1	DAY 1	<ul style="list-style-type: none">Starting to work with Proteus 8.12: Installing the Proteus 8.12, getting use to with the features of Proteus 8.12, selecting the components and designing the circuits. <p><i>Activity no. 1: Designing regulated fixed dc power supply in Proteus.</i></p>
2	DAY 2	<ul style="list-style-type: none">Downloading datasheets of various components and reading them.Reading the datasheets of the components used in making regulated power supply in Activity no. 1.Understanding the components used to make regulated power supply: transformer, diodes, shunt filter and IC 7805/7812.Starting to work with PCB designing software ExpressPCB: Installing the ExpressPCB software, selecting the components and designing PCB layout. <p><i>Activity no. 2: Preparing PCB layout of the regulated fixed dc power supply in ExpressPCB.</i></p>

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3	DAY 3	<p>Activity no. 2 (continued): <i>Preparing PCB layout of the regulated fixed dc power supply in ExpressPCB.</i></p> <ul style="list-style-type: none"> The process of PCB fabrication. <p>Activity no. 3: <i>Preparing etch from the PCB layout prepared during Activity no. 2, etching of PCB and drilling of PCB.</i></p> <ul style="list-style-type: none"> Testing various components such as transformer, diodes, LEDs, resistors etc. using multimeter.
4	DAY 4	<p>Activity no. 4: <i>Soldering the components on the PCB prepared during Activity no. 3. Testing of the very first circuit made.</i></p> <ul style="list-style-type: none"> Studying different types of toggle switches: SPST, SPDT and DPDT. Simulating these switches in Proteus for different applications.
5	DAY 5	<p>Activity no. 5: <i>Simulating and designing wired remote for a robot using DPDT switches.</i></p> <ul style="list-style-type: none"> Studying the different push buttons. Motor driver IC L293D. <p>Activity no. 6: <i>Simulating, designing layout, etching and soldering of wired remote for a robot using push buttons and motor driver IC L293D.</i></p>
6	DAY 6	<p>Activity no. 6 (continued): <i>Simulating, designing layout, etching and soldering of wired remote for a robot using push buttons and motor driver IC L293D.</i></p> <ul style="list-style-type: none"> Studying selector switches. Simulating various circuits containing selector switches in Proteus. Studying thumbwheel switch.
7	DAY 7	<ul style="list-style-type: none"> Studying BCD to 7-segment decoder IC 7447. Studying types of 7-segment displays. Designing test circuit to test each segment of 7-segment display. <p>Activity no. 7: <i>Simulating, designing layout, etching and soldering of a circuit which reads thumbwheel switch and displays count on 7-segment display.</i></p>
8	DAY 8	<p>Activity no. 7 (continued): <i>Simulating, designing layout, etching and soldering of a circuit which reads thumbwheel switch and displays count on 7-segment display.</i></p> <ul style="list-style-type: none"> Introduction to the technical report preparation.
9	DAY 9	<ul style="list-style-type: none"> Working with relays. Testing of relays using multimeter. Simulating simple circuits using relays. Designing of a holding circuit using relays and PBs. <p>Activity no. 8: <i>Simulating, designing layout, etching and soldering of a circuit involving turning on and off a dc motor/an ac lamp using PBs and relays.</i></p>



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10	DAY 10	<p>Activity no. 8 (continued): <i>Simulating, designing layout, etching and soldering of a circuit involving turning on and off a dc motor/an ac lamp using PBs and relays.</i></p> <ul style="list-style-type: none"> Preparing relays driver circuit using transistors and optocouplers (PC817). <p>Activity no. 9: <i>Simulating, designing layout, etching and soldering of 4 relays channel using PC817 optocoupler.</i></p>
11	DAY 11	<p>Activity no. 9 (continued): <i>Simulating, designing layout, etching and soldering of 4 relays channel using PC817 optocoupler.</i></p> <ul style="list-style-type: none"> Working with RF Module. Encoder and Decoder HT12E and HT12D. <p>Activity no. 10: <i>Simulating, designing layout, etching and soldering of circuits involving switching lamps on/off wirelessly using SPST switches, RF module, relays and relay driver.</i></p>
12	DAY 12	<p>Activity no. 10 (continued): <i>Simulating, designing layout, etching and soldering of circuits involving switching lamps on/off wirelessly using SPST switches, RF module, relays and relay driver.</i></p> <ul style="list-style-type: none"> Working with the Flip-Flops. Use of JK Flip-Flop – 7476 as T and D Flip-Flops. <p>Activity no. 11: <i>Simulating, designing layout, etching and soldering of circuits involving switching lamps on/off wirelessly using PBs, RF module, T – Flip-Flops, relays and relay driver.</i></p>
13	DAY 13	<p>Activity no. 11 (continued): <i>Simulating, designing layout, etching and soldering of circuits involving switching lamps on/off wirelessly using PBs, RF module, T – Flip-Flops, relays and relay driver.</i></p> <ul style="list-style-type: none"> Working with LDR (Light Dependent Resistor).
14	DAY 14	<p>Activity no. 12: <i>Simulating, designing layout, etching and soldering of automatic street light circuit using LDR.</i></p>
15	DAY 15	<ul style="list-style-type: none"> Using 555 timer IC as astable and monostable multivibrator. Simulating circuits using 555 timer IC. <p>Activity no. 13: <i>Simulating, designing layout, etching and soldering of a fairy light circuit using LEDs displaying variable rectangular wave.</i></p>
16	DAY 16	<p>Activity no. 13 (continued): <i>Simulating, designing layout, etching and soldering of a fairy light circuit using LEDs displaying variable rectangular wave.</i></p>



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17	DAY 17	<ul style="list-style-type: none">Using OpAmp 741 IC as analog comparator.Working with IR sensor: Receiver/Transmitter pair <p>Activity no. 14: Simulating, designing layout, etching and soldering of an automatic door opener/enclosure circuit using two IR sensors (one for opening door and other for closing door), OpAmp comparator and 555 timer IC (monostable mode) to run the motor in forward or backward for predetermined time for opening or closing of the door.</p>
18	DAY 18	<p>Activity no. 14 (continued): Simulating, designing layout, etching and soldering of an automatic door opener/enclosure circuit using two IR sensors (one for opening door and other for closing door), OpAmp comparator and 555 timer IC (monostable mode) to run the motor in forward or backward for predetermined time for opening or closing of the door.</p>
19	DAY 19	<ul style="list-style-type: none">Working with temperature sensor LM35. <p>Activity no. 15: Simulating, designing layout, etching and soldering of smart cooling system involving three no. of dc motor-based fans and a temperature sensor. Based on the three sections in temperature reading switch on/off the number of fans.</p>
20	DAY 20	<p>Activity no. 15 (continued): Simulating, designing layout, etching and soldering of smart cooling system involving three no. of dc motor-based fans and a temperature sensor. Based on the three sections in temperature reading switch on/off the number of fans.</p> <ul style="list-style-type: none">Working with sound sensor – MIC Condenser. <p>Activity no. 16: Designing, etching and soldering of clap switch circuit.</p>
21	DAY 21	<p>Activity no. 16 (continued): Designing, etching and soldering of clap switch circuit.</p> <ul style="list-style-type: none">Working with the Joystick module. <p>Activity no. 17: Simulating, designing, etching and soldering of a robot remote circuit using joystick module.</p>
22	DAY 22	<p>Activity no. 17 (continued): Simulating, designing, etching and soldering of a robot remote circuit using joystick module.</p>
23	DAY 23	<ul style="list-style-type: none">Use of TRIAC – BT136 and Photo-TRIAC – MOC3052 in place of relays

NOTE:

Viva-voce and submission of training report to be held after 15 days of the completion of the training.

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List of Registered Students for Summer training June 2023

Organised by Department of Electrical Engineering

S.NO.	Roll No.	Name	Branch
1	22EC04	Varsha	ECE
2	22EC13	Vinika kumari	ECE
3	22EC18	Naveen Kumar	ECE
4	22EC23	Sachin Yadav	ECE
5	22EC36	Vipin	ECE
6	22EC40	Nakul	ECE
7	22EC41	Sapna	ECE
8	22EC50	Ghanshyam	ECE
9	22EC53	Mohit	ECE
10	22EC56	Manvir	ECE
11	22EC64	Kulwant yadav	ECE
12	22EC67	VIPIN KUMAR	ECE
13	22EC68	Ravi	ECE
14	22EC71	Kunal tanwar	ECE
15	22EC72	Yogesh kumar	ECE
16	22EC73	Parveen Kumar	ECE
17	22EE01	Naveen Kumar	EE
18	22EE02	Kapil	EE
19	22EE04	Sahil	EE
20	22EE06	Neeraj	EE
21	22EE09	Harit Kumar	EE
22	22EE12	Yukesh Kumar	EE
23	22EE13	Sahil	EE
24	22EE16	Deepak kumar	EE
25	22EE21	Pawan	EE
26	22EE22	Satish	EE
27	20EE20	Gaurav	EE

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