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Electronics & Telecommunication Engineering

Academic Year – 2023-24	Class: TE
Semester – II	Date: 15/02/24 to 01/03/24
CO: CO1, CO2, CO3, CO4	PO: PO1, PO2, PO3, PO5, PO9, PO10, PO12

Innovative Teaching Methods

Title of Innovation method/activity: Experimental Learning

1. Name of Faculty: Dr. S. M. Jagtap

2. Subject: Power Devices & Circuits

3. Objective of Method: As per the task ahead -

I. Design and develop the circuit in Proteus.

II. Examine the results of designed electronic circuit and simulation software

4. Topic Covered through Activity:

1. MOSFET characteristics

2. DC to AC Inverter

3. UJT Triggering circuit For SCR

4. Single Phase Semi-converter with R Load

5. 3 phase full wave converter

6. Buck Converter DC-DC Converter

5. Description of method with Benefits (8 – 10 lines):

From the given task, students think on the various ways of design of electronic circuits to obtain the results. Among their formed group of 3members, they discuss on various parameters to be acquire as per shown in the task. As the output of designed circuit is shown as a variable, the students have to use controlled electronic devices as the basics of the same they studied. For the controlling as well as for protection of controlled devices, the students have to think on minimum and maximum gate drive requirement and also on isolation circuits. As an individual or group, the student also learns that how to select and adjust the parameters of source which is available in the simulation tool. After their design on paper, they use simulation tool to check the results and to prepare a report on the same work they done.

The method:

1. The assigned task is completed by a team only.

2. All teams are continuously under the observation of teachers as an engineering ethics to check which various Medias the students are using for the paper work design and simulation.



3. Also, all teams are continuously under the observation by teachers for the following portfolios-
 - Design of complete circuit on paper
 - Simulation of designed circuit
 - Simulated Result, and report writing
4. All teams are asked to submit the scan copies of paper work design, report and simulation results to the Google classroom.
5. Teacher examined thoroughly the data received on Google classroom

Roles and Responsibilities

Teacher

Provide the design and development task as per the basics studied by the student.

Develop the awareness among the students about the applications of power devices.

Provide the study material and appropriate guide lines at every stage

Remain available during the completion of task.

Prepare assessment methodology.

Student

Go through all the material provided on various electronic devices

Once topic assigned, understand and discuss individually within the group.

Actively participate in group and contribute by means of discussion

Group

Form the group of members as per the guidelines by teachers.

Understand and discuss to finalize the best solution for the assigned task.

Assign the work within the group to achieve the task within stipulated time period.

6. Assessment Tools & Rubrics:

Simulation (20)	Design Circuit (5) Components Selection (5) Simulation in Tool (5) Simulated Result Not Verify as per hardware (0) Total - 20	Design Circuit (5) Components Selection (5) Simulation in Tool (5) Simulated Result Not Verify as per hardware (0) Total - 15	Design Circuit (5) Components Selection (5) Error during in Simulation and Simulated Result Not Verify as per hardware (0) Total - 10	Design Circuit (5) Wrong Components Selection (0) Error during in Simulation and Simulated Result Not Verify as per hardware (0) Total - 05
Report (10)	Design Details Working in details Waveform representation Simulated results Total 10 marks	Working in details Waveform representation Simulated results Total 7	Waveform representation Simulated results Total - 5	Simulated results Total -3
Quiz (20)	Solve all Questions Correctly total 20 Marks	Marks get deduct for wrong answers		

7. Evaluation Sheet

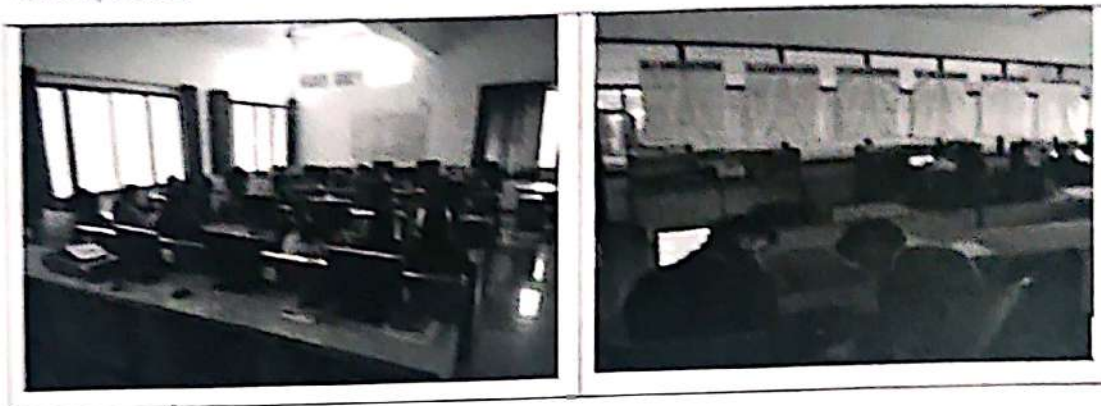
RN	Name Of Students	Topic	Simulation (20)	Report (10)	Quiz (20)	Total Assessment (50)
1	Bhoomi S Ahire	Half Wave Converter	15	6	20	41
2	Ruchita Nitin Bedse	Thyristor Triggering Circuit	15	7	13	35
3	Tanisha Bhalekar	SCR Characteristics (Phase Control)	15	6	10	31
4	Devansh Bodkhe	UJT Triggering Circuit For SCR	15	5	6	26
5	Pranjali Chaudhari	Thyristor Triggering Circuit	15	7	20	42
7	Harish R Deore	UJT Triggering Circuit For SCR	18	7	14	39
8	Atharva Dhanait	Iglt Characteristics	18	7	20	45
9	Dhiraj S Bachhav	UJT Triggering Circuit For SCR	18	7	5	30
10	Tushar Dhondage	Iglt Characteristics	17	7	11	35
11	Omkar Dhongade	UJT Triggering Circuit For SCR	18	8	13	39
12	Dhananjay Gaikwad	SCR Characteristics (Phase Control)	17	7	15	39
13	Yash Gangurde	Half Wave Converter	13	6	12	31
14	Vishakha Joshi	SCR Characteristics (Phase Control)	15	7	12	34
15	Tanmay Karsale	IGBT Characteristics	17		10	27
16	Sarvadnya Kawade	DC To AC Inverter	18	8	15	41
17	Mandar R Lohare	Single Phase Full Wave Controlled Rectifier With R And RL Load	12	7	10	29
18	Disha More	MOSFET Characteristics	18	7	10	35
19	Sejal More	MOSFET Characteristics	17	8	7	32
20	Jagdish S Mutadak	Single Phase Full Wave Controlled Rectifier With R And RL Load	12	6	7	25
21	Darshana Narkhede	DC To AC Inverter	18	8	15	41
22	Bhardwaj Patil	SCR Characteristics (Phase Control)	17	7	20	44
24	Sanjali Sangale	Halfwave Rectifier	13	6	0	19
26	Ishwari Shinde	Halfwave Rectifier	12	6	4	22
27	Tejashri Shinde	Thyristor Triggering Circuit	15	6	10	31
28	Siddhesh Patil	Single Phase Half Wave Controlled Rectifier R Load	10	6	10	26
30	Rucha Tatar	Half Wave Converter	12	6	10	28
31	Omkar Tondare	Single Phase Half Wave Controlled Rectifier R Load	13	7	12	32
32	Vaishnavi Wagh	Halfwave Rectifier	12	7	12	31
36	Om Bankar	Single Phase Half Wave Controlled Rectifier R Load	15	7	5	27
37	Gaurav Chavan	Single Phase Semi Converter With R Load	17	6	15	38
37	Sumeet Chavan	Single Phase Half Wave Controlled Rectifier R Load	15	7	17	39
39	Sai Vilas Desale	3 Phase Inverter 180° Mode	19	9	13	41
40	Om Kale	3 Phase Inverter 180° Mode	19	7	12	38
41	Jayesh Kavekar	Single Phase Semi Converter With R Load	17	8	12	37
43	Sarthak Pagare	Buck Converter Dc-Dc Converter	18	9	15	42

44	Tejas Patil	Single Phase Semi converter With R Load	15	6	16	37
46	Pranav Shelke	Single Phase Semi converter With R Load	17	6	5	28
48	Vidya Vishwas Aher	3 Phase Full Wave Converter	18	6	11	35
49	Bhagwat Renuka	Full Controlled Bridge Rectifier With R Load	16	8	10	34
50	Suraj Bhosle	IGBT Characteristics	16	6	6	28
51	Anushka Dambir	DC To AC Inverter	18	8	10	36
52	Harshada Deole	Full Control Bridge Rectifier With RL Load		7	11	18
53	Rutuja Dhage	3 Phase Full Wave Converter	18	6	12	36
54	Dhondge Pratiksha	Full Controlled Bridge Rectifier With R Load	16	8	15	39
55	Shashank Gangurde	3 Phase Inverter 180° Mode	19	7	12	38
56	Rutuja Kakad	Full Control Bridge Rectifier With RL Load		7	13	20
58	Sakshi Karad	3 Phase Full Wave Converter	18	6	12	36
59	Minakshi Kasav	Full Control Bridge Rectifier With RL Load		8	10	18
60	Kavade Yogita	Resistance Triggering Circuit	16	7	8	31
62	Nilesh Mahajan	AC To DC Converter		6	12	18
63	Nikhil Marathe	Buck Converter Dc-Dc Converter	19	9	15	43
64	Nimbalkar Apurva	Resistance Triggering Circuit	16	7	15	38
65	Manoj Pawar	Buck Converter Dc-Dc Converter	19	9	12	40
66	Shaikh Shifa	Resistance Triggering Circuit	16	8	20	44
67	Leena Sonawane	Full Control Bridge Rectifier With RL Load	16	6	10	32
68	Puja Suryawanshi	AC To DC Converter	15	6	10	31
69	Shrushti Tejale	AC To DC Converter	14	6	10	30
70	Thete Gayatri	Full Controlled Bridge Rectifier With R Load	15	8	14	37
71	Gaurav Wadge	3 Phase Inverter 180° Mode	19	8	10	37

8. Impact Analysis

SN	3- High/Excellent	2 - Moderate/Average	1- Slight/Poor
1. Did you understand and cover the objective of the activity?	82%	18%	-
2. Do you find that methodology is helpful to cover the content beyond syllabus?	93%	07%	-
3. Does this helps you for building a good team?	83.46%	16.53%	-
4. Does the content covered are relevant and will be helpful as a life-long learning?	75.00%	25%	-
5. Can you want to conduct such activity again?	97.95%	2.04%	-

3. Activity Picture



10. For review and critique contact: e-mail address of faculty and HOD
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Dr. Birari. V.M
HoD