- **Sample Pedagogy implementation report of EEE Faculty:**
- Name of the Activity: Student seminar
- Course : Electric Hybrid Vehicles
- Name Of Topic : Series and Parallel Configuration
- Year/Branch : IV B. Tech I Semester EEE
- Date of conduction : 28/12/2024
- **INTRODUCTION ON PEDAGOGY:**
- Student seminars are an effective way to enhance learning by allowing students to research, present, and discuss topics in a structured format. These seminars encourage active participation, improve communication skills, and deepen subject understanding. This method is focused on improving students' communication skills and their ability to explain technical concepts clearly. It allows students to take ownership of their learning by researching and presenting topics to their peers. It was shown in figure 2.1.2.a. Faculty assess students based on content depth, presentation clarity, confidence, and engagement. Constructive feedback is provided to help students refine their delivery and subject knowledge. This activity also promotes public speaking skills, which are essential for academic and professional success. Rubrics were designed and evaluated.
- **IMPLEMENTATION:**
- Topic is given to students and asked students to come voluntarily to give a seminar.
- Students prepared notes for the topic and informed the class about the seminar prior.

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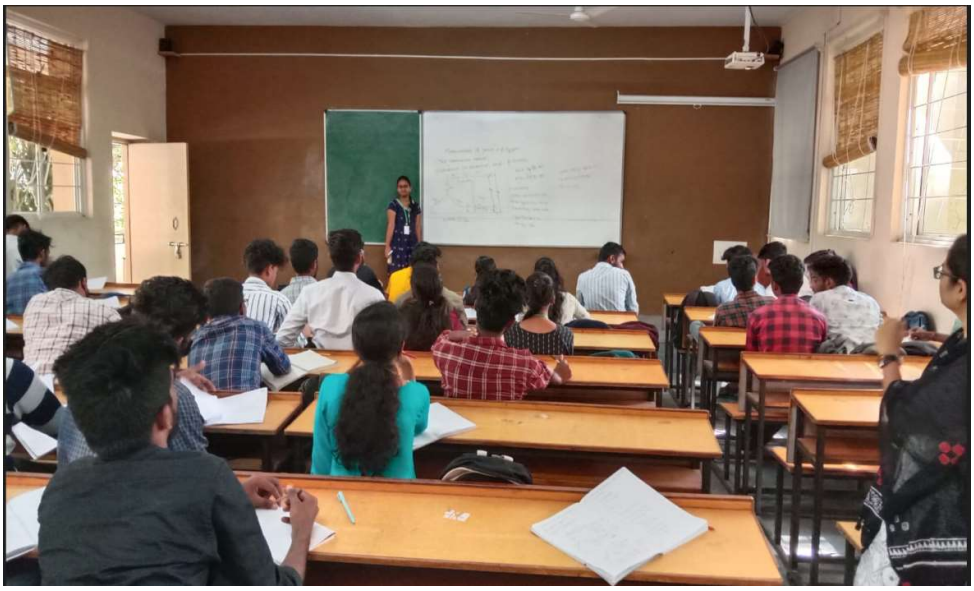


- Figure 2.1.2. a. Student Seminars

- **OUTCOME:** Students actively participated to give a seminar.

- **TIME TAKEN TO COMPLETE THE ACTIVITY: 60 minutes**
- **EVALUATION**:

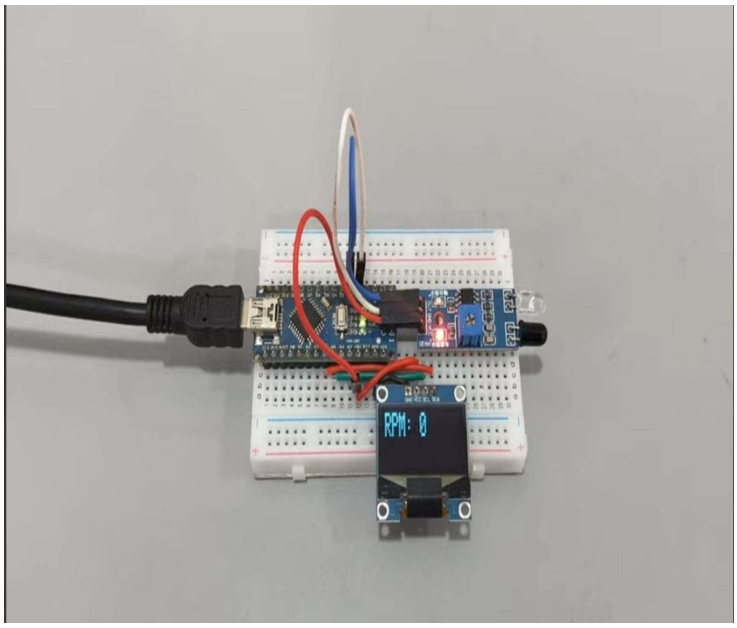
- Here's a basic rubric for student seminars with a total of **5 marks**, formatted as shown in table.

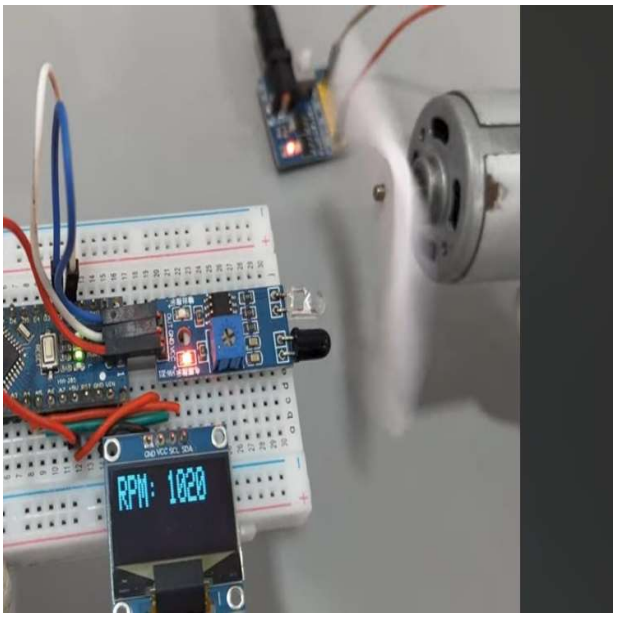
• Criteria	• Excellent (5)	• Good (4)	• Satisfactory (3)	• Needs Improvement (2)	• Poor (1)
• **Content (2 Marks)**	• Clear, well-structured, and relevant content with strong subject knowledge	• Good content with minor gaps in clarity or relevance	• Basic content with some gaps in understanding	• Limited content with significant gaps	• Incomplete or irrelevant content
• **Presentation Skills (1 Mark)**	• Confident, well-paced, engaging delivery with good voice modulation	• Clear delivery with minor hesitations or lack of engagement	• Understandable but lacks confidence or fluency	• Frequent hesitations, unclear speech, or monotone delivery	• Difficult to understand or disorganized
• **Visual Aids (1 Mark)**	• Well-designed, clear, and relevant	• Good visuals but minor issues with clarit	• Basic visuals, somewhat helpful but	• Poorly designed visuals, difficult to follow	• No visuals or irrelevant

• Criteria	• Excellent (5)	• Good (4)	• Satisfactory (3)	• Needs Improvement (2)	• Poor (1)
	slides/ visuals that enhance understanding	y or relevance	lacking impact		visuals
• **Q&A Handling (1 Mark)**	• Effectively answers all questions with confidence and clarity	• Answers most questions well but with minor gaps	• Answers some questions but lacks confidence or depth	• Struggles to answer questions with little clarity	• Unable to answer questions effectively

- Table 2.1.1. Rubrics for Student Seminar Presentation

- **Problem-Based Learning:** The Problem-Based Learning (PBL) aims to provide students with a platform to showcase their innovative solutions to real-world challenges. It encourages teamwork, critical thinking, and industry-oriented learning. Students work in groups on problem statements provided at the beginning of the semester. The projects are then exhibited in a formal setting where a team from Aalborg University visited our campus to evident these projects and appreciated EEE Students. This approach enhances experiential learning and prepares students for practical applications in their careers. This pedagogy is aimed at providing hands-on experience in designing and analyzing Induction Motor using MATLAB software. Students work on mini-projects related to Electrical Machines, where they use MATLAB to simulate, optimize, and analyze different antenna models. The projects are then presented, with students explaining their methodologies, challenges, and findings. This method enhances problem-solving skills and industry readiness by integrating theoretical knowledge with practical application. One sample PBL is shown in figure 2.1.3.





- Figure 2.1.3. Speed Control of Induction motor PBL project
- HITAM has an MOU with Aalborg University. Faculty from Department of EEE are getting trained from the Aalborg team. Faculty at Department of EEE implemented PBL for this batch of EEE students. We were successful in implementing it. The student Learning Outcomes were achieved.
- Problem statement: Design speed control of an Induction motor using suitable methods using MATLAB
- **Outcomes:**
- Application of Knowledge
- Problem-Solving Skills
- Design and Implementation
- Teamwork and Collaboration
- Communication Skills
- Project Management
- Critical Thinking and Innovation
- Use of Tools and Technologies
- **Challenges:** Initially students resisted towards PBL
- Number of Students Participated: 35
- Student Feedback:
- More active to participate in the activity

- Feels more satisfactory with outcome of activity
- Many students appreciate PBL for its engaging and interactive nature. They often report improved critical thinking, problem-solving, and teamwork skills. They find it relevant and feel better prepared for real-world challenges. Some students found PBL initially uncomfortable, as it requires active participation and self-directed learning. They requested clearer guidelines and expectations. Feedback is taken from the students to understand the student's interests and suggestions for effective implementation for further semesters.
- The Problem-Based Learning is a valuable educational approach for improving student engagement and academic performance in the Antennas and Wave Propagation course. By providing a structured, real-world problem for students to solve, PBL enhances their understanding of complex concepts and prepares them for professional practice. The Academic Performance of the students has been gradually improved with the experiential learning in the class. The positive results from this implementation suggest that PBL can effectively address gaps in traditional teaching methods and contribute to the achievement of Program Outcomes.

Student Seminars

Implementation:

✓ Topic is given to students and asked students to come voluntarily to give a seminar.
✓ Students prepared notes for the topic and informed the class about the seminar prior.

Outcome:

Students were improved their research skills and get the ability to gather the relevant information , and synthesize it into a coherent presentation.

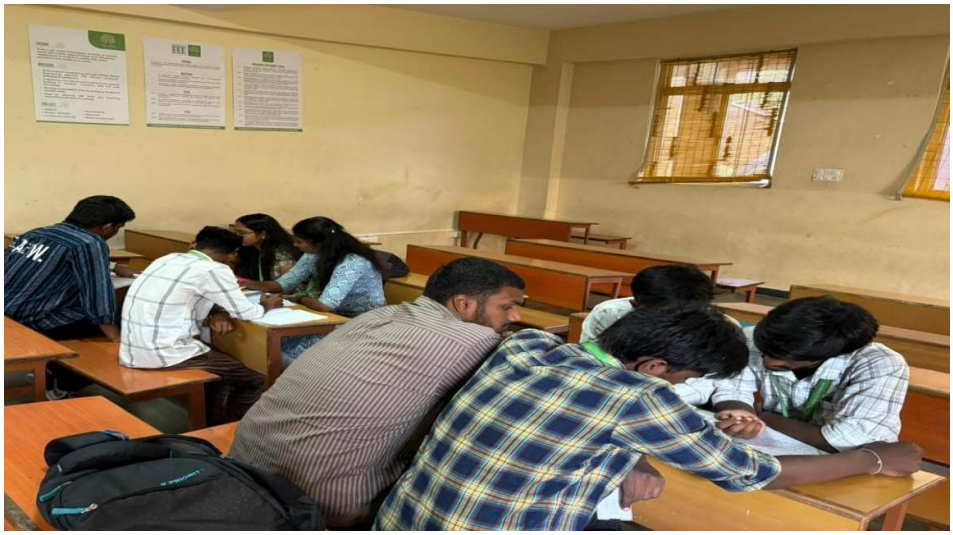
Assessment:

✓ Awarded 5 marks as an Assignment.

Rubrics:

Rubrics for Seminars [10 Marks]			
Criteria	Exceeds Expectations	Meets Expectations	Needs Improvement
Knowledge on Content (3 Marks)	Extensive Knowledge related to the topic (3 Marks)	Fair Knowledge related to the topic (2 Marks)	Insufficient Knowledge related to the topic (1 Mark)
Presentation (3 Marks)	Content of presentstions are appropriate, well delivered and followed dresscode (3 Marks)	Content of presentstions are partially appropriate, well delivered and followed dresscode (2 Marks)	Content of presentstions are not appropriate, well delivered and or not followed dresscode (1 Mark)
Communication (4 Marks)	Proper eye contact,confident,clear voice with good verbal communication (4 Marks)	Clear voice with good verbal communication,but less eye contact with audience (2 Marks)	No eye contact and No clarity in voice (1 Mark)

Group Discussion



Implementation :

- ✓ After completion of the lecture on Comparators, asked Students to prepare Summary points by discussing as a team (a Team of 6 can divide among themselves) on transformer in detail.
- ✓ One student from each team can elaborate on the topic to the whole class.

Outcome:

Students were develop the ability to identify and propose solutions to given topic through collaborative discussions.

Assessment:

- ✓ Awarded as a Best Team for clear Explanation

Flipped classroom

Implementation :

- ✓ Posted reference material of given topic on WhatsApp group.
- ✓ Introduction video link sharing to the students.
  https://www.youtube.com/watch?v=FxsA-UgqiAU
- ✓ Asked students to prepare salient points by using material and net access.
- ✓ Planned to conduct seminar on next day.

Outcome:

Students were develop the habit of independent learning by engaging with pre-class materials.

A TECHNICAL REPORT ON PEDAGOGY IMPLEMENTED

Student seminar on four quadrant operation

Sub: PSD, UEP
III, IV -EEE

28/12/24

AY:2024-25 I Sem

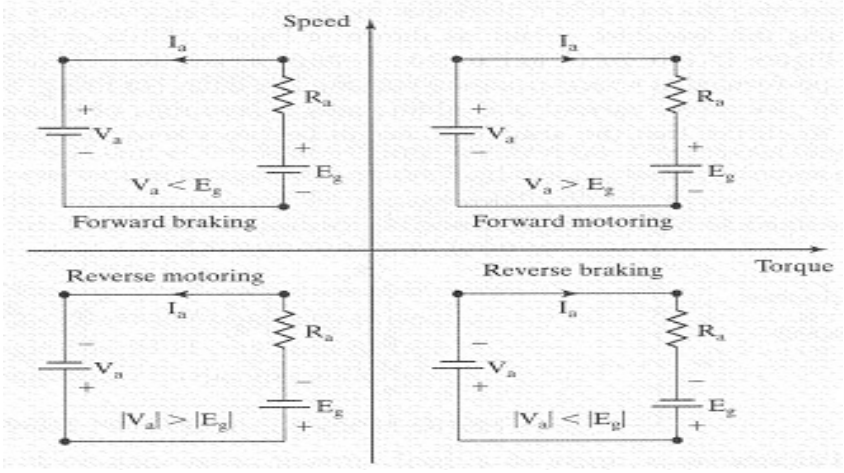
INTRODUCTION ON PEDAGOGY:

1) Class will be divided into groups
2) Each group will have to come up with one solar application
3) All the groups will thoroughly discuss about that topics
4) They have to present the application in the form of seminar

IMPLEMENTATION:

- Class will be divided into groups
- Each group will have to come up with one application
- They have to discuss for 15 min and have to present in the class
- Remaining groups will be evaluating the performance

PROOFS:



OUTCOME: More number of applications will be discussed in one class.

E-RESOURCES/Texbooks Referred :

- **education.ebizel.com (Learn and grow)**

TIME TAKEN TO COMPLETE THE ACTIVITY: 60 minutes

Evaluation:

Peer Evaluation

In the online class we can see the peers will be giving the marks for the presentations

Course Projects in BEEE:

COURSE PROJECT
NAME : HARIKA DODLA

ROLL NO : 22E51A6920

BRANCH : CSO

SUBJECT : BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

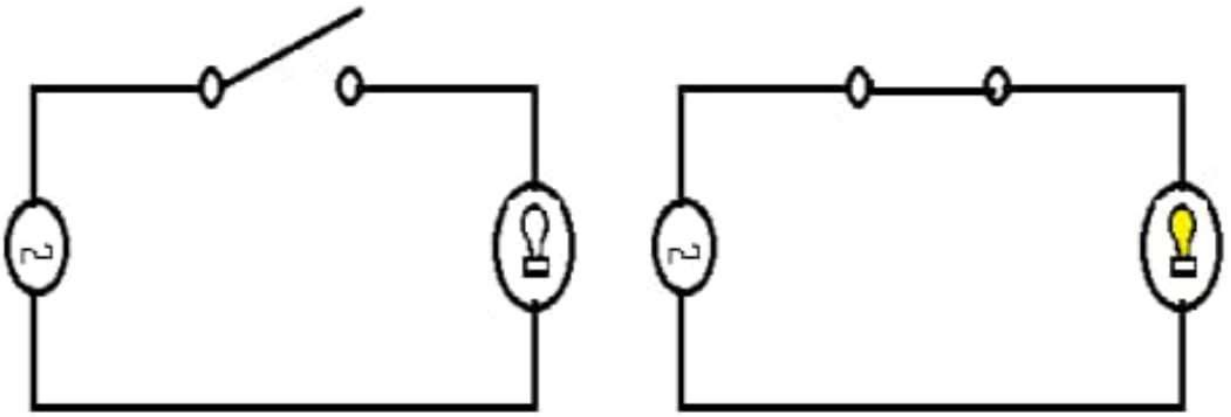
YEAR/SEMESTER : 1st YEAR /1st SEMESTER

AIM: To find the value of current when one lamp is controlled by one switch.

APPARATUS:

S. NO	APPARATUS REQUIRED	RANGE	QUANTITY
1.	Bulb	9W	1
2.	Switch	-	1
3.	Connecting Wires	-	Required
4.	Bulb Holder	-	1

CIRCUIT DIAGRAM:



WORKING PRINCIPLE:

In this experiment we measure the current value by applying some voltage to it. Ammeter is a device used to measure current. The unit of the current is ampere. The working principle of ammeter mainly depends on resistance as well as inductive resistance. Ammeter is connected in series because the flow of current within the series circuit is the same. This device includes extremely less independent because it must include less amount of voltage deep across it. This device measures the flow of current with the help of set of coils. These coils have inductive resistance and low resistance.

PROCEDURE:

1. Connect the circuit as shown in the circuit diagram.

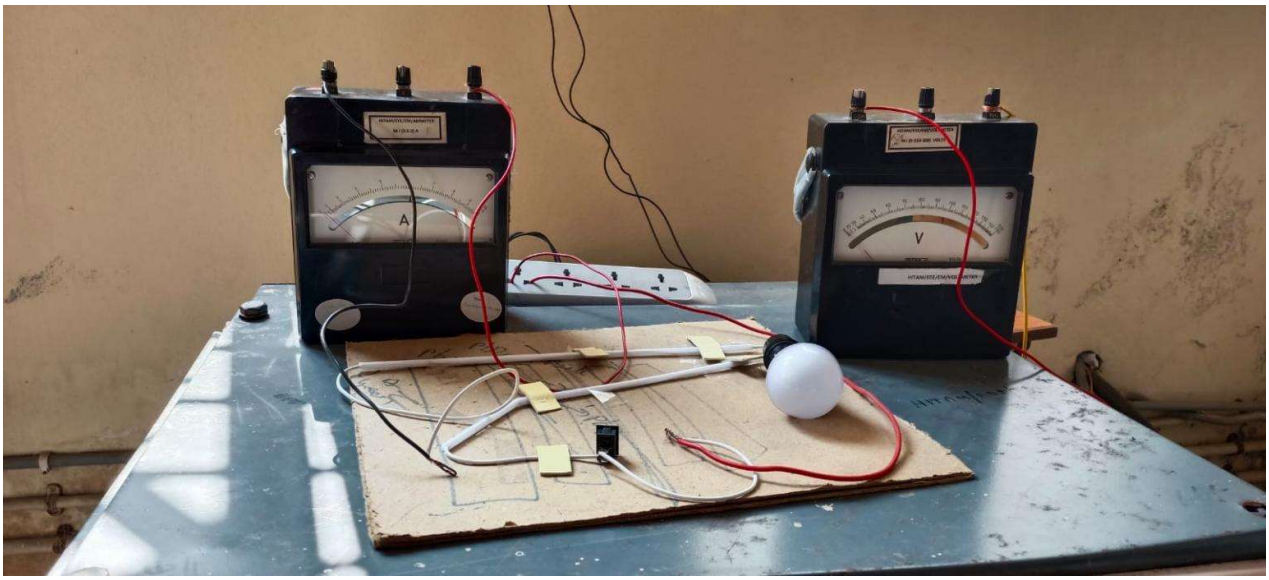
2. Connect (or) Apply Voltage to the circuit.

3. On the switch and note ammeter readings at different voltages.

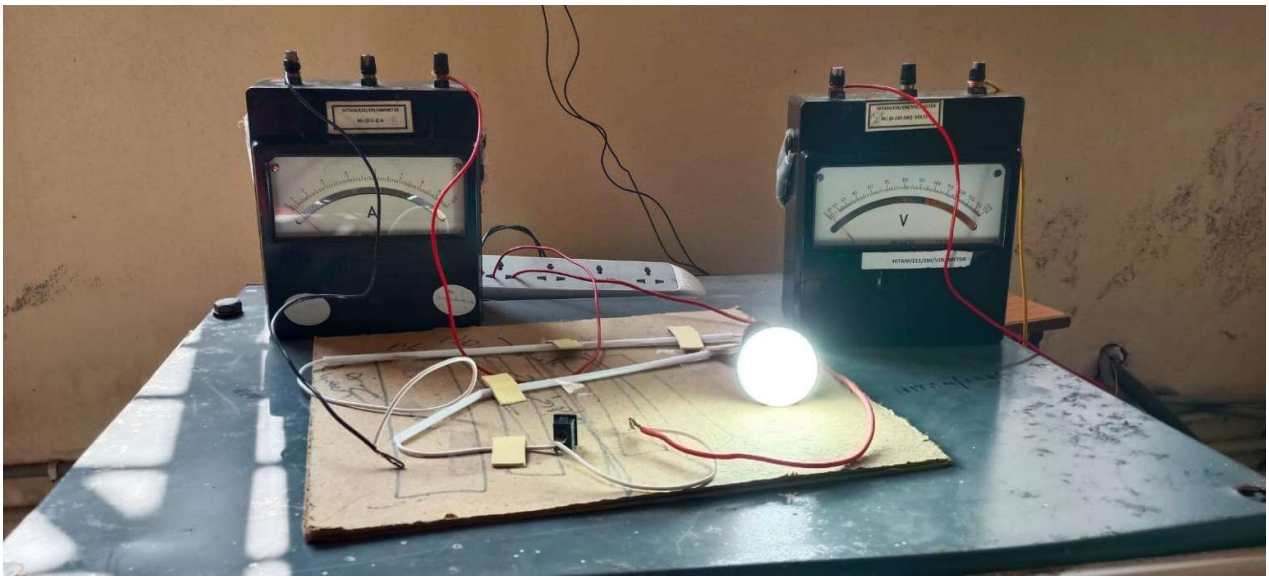
4. Note the values and compare theoretically and practically.

EXPERIMENTAL SETUP:

Open circuit



Short circuit



PRECAUSTIONS:

1. Avoid overloading the voltage source.

2. Connect the wires properly according to the circuit diagrams.

3. Don’t operate the circuit with wet hands.

4. Take the ammeter readings accurately.

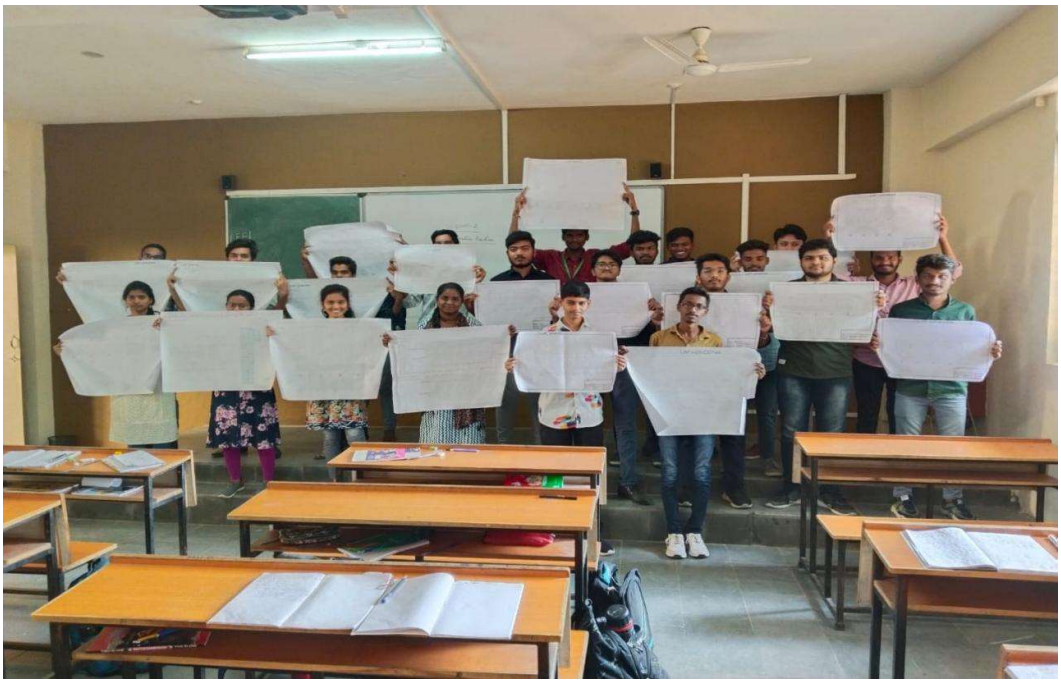
5. Do not use equipment with frayed cords.

RESULT:

Voltage = 215V

Current = 1A

Poster Presentation:



Student Seminars

Substation Visit

Flipped classroom

Implementation :

✓ Posted reference material of given topic on **WhatsApp** group.

✓ Introduction video delivered myself and posted on **YOUTUBE** for ease of access by sharing the link to students. *https://youtu.be/NX-A9j7uYaA*

✓ Asked students to prepare salient points by using material and net access.

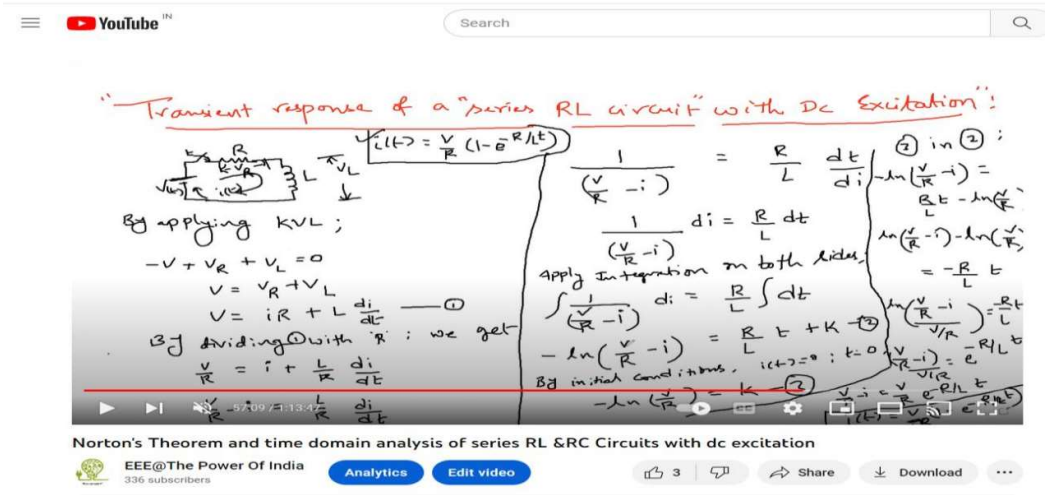
✓ Planned to conduct seminar on next day.

Outcome:

✓ *Students were able to analyze how dc transients occurs in electrical circuits.*

Assessment:

Questions asked to individual student on particular topic, Few students correctly answered.



JIGSAW

Implementation :

✓ I formed 5 teams with size of 5 members according to order of their roll numbers. I assigned different segments (total 5 parts) to individual student in group.

✓ I gave 15 min to learn independently, later I formed teams who complete same segment in groups as a new group named as expert group.

✓ In expert group they shared their points and returned to their own group after completing the discussion in expert group.

✓ Now students shared complete information to their own groups and finally they presented.

Outcome:

Students got ability to explain the method which is suitable to reduce the given

complex networks.

Assessment: Asked students to write bullet points in notes to explain by calling randomly irrespective of a team.

Course Project Implementation :

✓ Problem statements given to students.

✓ Asked students to provide solution in theoretical and also need to be verified with Realtime connections on hardware.

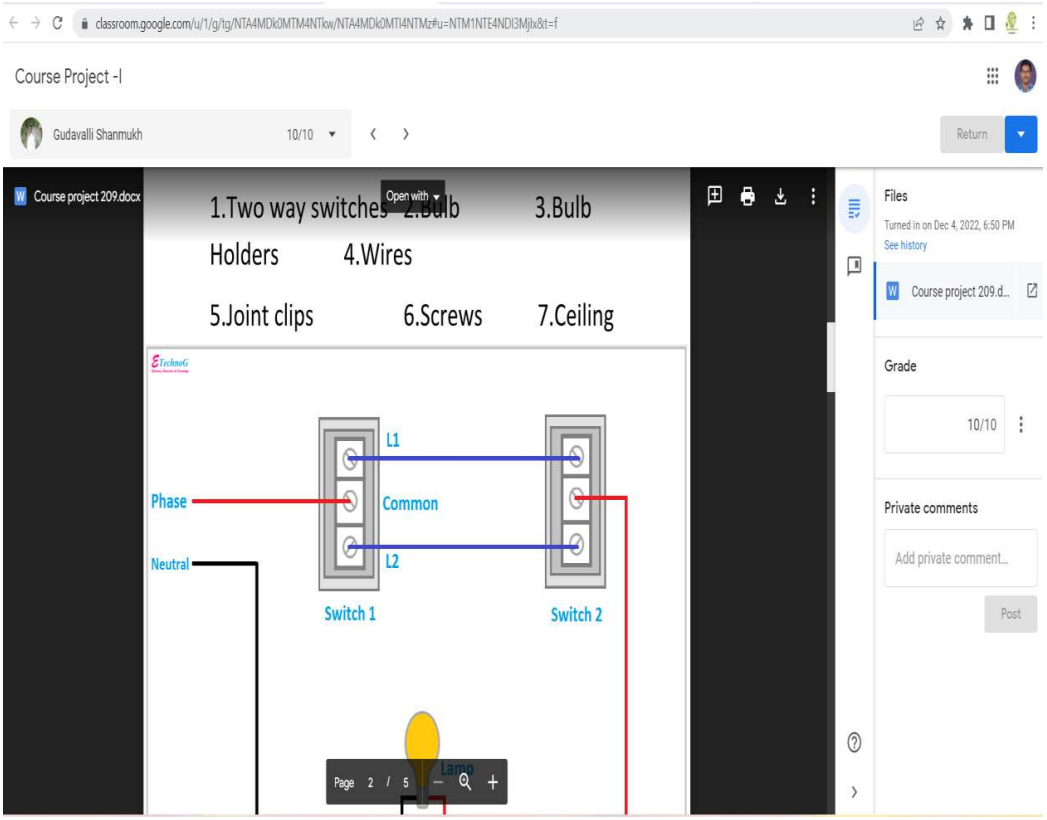
✓ Students are designed the circuit and verified in both theoretical & Practical.

✓ Asked students to prepare a 2-3 pages brief report for submission.

Outcome:

✓ Students actively participated to complete the given projects.

✓ 100% of Students submitted report.



Student Seminars

Animation Videos