



## Department of Electrical and Electronics Engineering

Academic Year 2021 – 2022 (Even Semester)

**Degree, Semester & Branch:** IV Semester B.E. EEE – A & B Section

**Course Code & Title:** EE8401 Electrical Machines - II

**Name of the Faculty member (s):** Mr. E. Thangam

### Innovative Practice Description

- **Unit / Topic:** Unit IV / Necessity of Starting
- **Course Outcome:** CO 4
- **Topic Learning Outcome:** TLO - 12
- **Activity Chosen:** Demonstration
- **Justification:**

Starters are used to protect motors from damage that can be caused by very high current and torque during startup. They do this by using starter to start the motor safely, and restrict the current to an acceptable level. This session which enhance the learning level and as a teacher I can judge the understanding level of the students.

- **Time Allotted for the Activity:** 15 minutes
- **Details of the Implementation:**

After teaching the concept, give students one or two minutes to think about the topic without writing anything.

Total Strength is 61,

Photographer: one student - Mr. T. Udaya (interested in photography)

Reporter: Myself

At the end the Class (Last 15 minutes)

- ✓ I took the students to the electrical machines laboratory and asked the students to think about the operation of motor without starter for 2 minutes.
- ✓ Then I told them to Pair with their neighbours and discuss about the various types of starter for another 2 minute.
- ✓ Then, I shown the demo starter for each student and explained. (8 minutes)
- ✓ Finally I asked each student to tell about important key features of starter. (3 Minutes)



- **CO – PO / PSO mapping:**

CO	PO 1	PO 2	PO 3	PO 8	PO 10	PO12
CO4	3	2	1	1	2	2

(1 – Low      2 – Moderate      3 – High)

- **Images / Screenshot of the practice:**



**Reflective Critique:**

- ❖ **Feedback of practice from students and other stakeholders:**

Students felt good about this demonstration.

- ❖ **Benefit of the practice:**

1. The assessment of effectiveness of the activity was felt when told most of the points.
2. While conducting the activity, I understood that the students can able to explain the necessity of starter in electrical motor.

- ❖ **Challenges faced in implementation:**

1. Time utilization for conducting activity.

References:

- ❖ <https://omerad.msu.edu/teaching/teaching-strategies/active-learning-strategies/27-teaching/172-demonstrations>
- ❖ Nagrath, I.J. and Kothari.D.P., Electric Machines', McGraw-Hill Education, 2004

**Signature of Faculty Member**

**HOD**



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**Course Code & Title:** EE8401 Electrical Machines – II

**Name of the Faculty member (s):** Mr.E. Thangam

### Innovative Practice Description

- **Unit / Topic:** Unit II / Principle of Operation and Starting Methods
- **Course Outcome:** CO 2
- **Topic Learning Outcome:** TLO - 5
- **Activity Chosen:** Demonstration
- **Justification:**

The synchronous motor is not a self-starting machine. The principle of operation of the motor is taught using the active learning approach of demonstration, Students' involvement in the learning is improved based on this demonstration approach.

- **Time Allotted for the Activity:** 15 minutes

- **Details of the Implementation:**

After teaching the concept, give students one or two minutes to think about the topic without writing anything.

Total Strength is A section - 31 & B Section - 30

Photographer: one student – Ms. T. Udaya (interested in photography)

Reporter: Myself

At the end the Class (Last 15 minutes)

- ✓ I asked the students to think about various types of starting methods to start the motor for 2 minutes.
- ✓ Then I told them to Pair with their neighbours and discuss about the construction of the machine for another 1 minute.
- ✓ Finally, I shown the motor parts for each student and explained.



- **CO – PO / PSO mapping:**

CO	PO 1	PO 2	PO 3	PO 5	PO 7	PO8	PO10	PO12
CO2	3	2	1	2	1	2	2	2

(1 – Low

2 – Moderate

3 – High)

- **PO / PSO mapped:**

Innovative practice	PO 7
	1
Justification for correlation	The Impact of low power factor is discussed, hence the students will think of giving solutions using synchronous motor, hence it is slightly correlated.

- **Images / Screenshot of the practice:**



## Reflective Critique:

### ❖ *Feedback of practice from students and other stakeholders:*

Students told that it is good see all the parts of the machines individually and demonstration helps the students to understand the concepts easily.

### ❖ *Benefit of the practice:*

1. Students can able to understand the impact of engineering solution on society
2. Most of the students attended the question asked Internal Assessment Test – I retest.
3. The success of the activity was evaluated by asking the same question during principle of operation, starting methods (Unit – II) – **Around 80% of students answered.**
4. Students can able to explain the concepts in examination without any confusion.

### ❖ *Challenges faced in implementation:*

1. Time utilization for conducting activity.

## References:

- ❖ <https://omerad.msu.edu/teaching/teaching-strategies/active-learning-strategies/27-teaching/172-demonstrations>
- ❖ Nagrath, I.J. and Kothari.D.P., Electric Machines', McGraw-Hill Education, 2004

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### Innovative Practice Description

- **Unit / Topic:** Unit III / Losses, Efficiency and Power Stages.
- **Course Outcome:** CO 3
- **Topic Learning Outcome:** TLO - 9
- **Activity Chosen:** Demonstration
- **Justification:**

The various losses in three phase Induction and its causes were explained using demo motor. This session which enhance the learning level and as a teacher I can judge the understanding level of the students.

- **Time Allotted for the Activity:** 15 minutes
- **Details of the Implementation:**

After teaching the concept, give students one or two minutes to think about the topic without writing anything.

Total Strength is 61,

Photographer: one student - Mr. T. Udaya (interested in photography)

Reporter: Myself

At the end the Class (Last 15 minutes)

- ✓ I took the demo motor to the class and asked the students to think about the location where power is being lost in various stages for 2 minutes.
- ✓ Then I told them to Pair with their neighbours and discuss about the various losses of three phase induction motor for another 2 minute.
- ✓ Then, I shown the demo motor to each student and explained. (8 minutes)
- ✓ Finally I asked each student to give the summary. (3 Minutes)



- **CO – PO / PSO mapping:**

CO	PO 1	PO 2	PO 3	PO 10	PO12
CO3	3	2	1	2	2

(1 – Low      2 – Moderate      3 – High)

- **Images / Screenshot of the practice:**





## Reflective Critique:

❖ ***Feedback of practice from students and other stakeholders:***

Students felt good about this demonstration.

❖ ***Benefit of the practice:***

1. The assessment of effectiveness of the activity was felt when told most of the points.
2. While conducting the activity, I understood that the students can able to explain the various losses in three phase induction motor.

❖ ***Challenges faced in implementation:***

1. Time utilization for conducting activity.

## References:

- ❖ <https://omerad.msu.edu/teaching/teaching-strategies/active-learning-strategies/27-teaching/172-demonstrations>
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