



Department of Electrical and Electronics Engineering Academic Year 2022 – 2023 (Even Semester)

Degree, Semester & Branch: IV Semester B.E. EEE

Course Code & Title: EE3405 Electrical Machines – II

Name of the Faculty member (s): Mrs. S. Jeyanthi

Innovative Practice Description

- **Unit / Topic:** Unit I / Constructional Details of Synchronous Machine
- **Course Outcome:** CO 1
- **Unit Outcome:** 1a
- **Activity Chosen:** Demonstration
- **Justification:**

The construction detail of the Synchronous Generator 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.

At the end the Class (Last 15 minutes)

- ✓ I asked the students to think about various parts of the synchronous machine 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	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO4	3	2	1	-	-	-	-	-	1	1	-	1	2	-	-

(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	PO 9
	1
Justification for correlation	The students can Function effectively as a team

- **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. Students can able to explain the concepts in examination without any confusion.

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

1. Time utilization for conducting activity.

References:

1. A.E. Fitzgerald, Charles Kingsley, Stephen. D. Umans, 'Electric Machinery', Mc Graw Hill publishing Company Ltd, 6th Edition 2017.
2. Stephen J. Chapman, 'Electric Machinery Fundamentals' 4th edition, McGraw Hill Education Pvt. Ltd, 4th Edition 2017.
3. D.P. Kothari and I.J. Nagrath, 'Electric Machines', McGraw Hill Publishing Company Ltd, 5th Edition 2017

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Department of Electrical and Electronics Engineering

Academic Year 2022 – 2023 (Even Semester)

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Course Code & Title: EE3405 Electrical Machines II

Name of the Faculty member (s): Mrs. S. Jeyanthi

Innovative Practice Description

- **Unit / Topic:** Unit II / Principle of operation
- **Course Outcome:** CO 2
- **Unit Outcome:** 2a
- **Activity Chosen:** Think pair share
- **Justification:**
 - ✓ It helps students to think individually about a topic or answer to a question.
 - ✓ It teaches students to share ideas with classmates and builds oral communication skills.
 - ✓ It helps focus attention and engage students in comprehending the reading material.
- **Time Allotted for the Activity:** 10 minutes
- **Details of the Implementation:**

Think-Pair-Share innovative practice conducted for II year EEE students, after explained the concept of principle of operation of synchronous motor. First, I asked the students to think about the reason for not self-starting of synchronous motor for 2 minutes. Then I make them as a pair to discuss their neighbour's and asked the students to discuss about wave parameters of the electromagnetic waves in different media for 3 minutes. Finally I asked the one of the team to explain the concept to whole class for further discussion. The students from group share their points and participated in the discussion for 10 minutes.

- **CO – PO / PSO mapping:**

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO2	3	2	1	-	-	-	-	-	1	1	-	1	2	-	1

(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	PO9
	1
Justification for correlation	The students can Function effectively as a team

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

Innovative Teaching Method Execution
Principle of operation of Synchronous motor – Think Pair Share
R.RISHIKANT H P.GIURUSHANKAR
<p>Synchronous motor:-</p> <ul style="list-style-type: none"> * Synchronous Motor is not a self starting motor, It converts the Electrical energy into Mechanical energy. * Synchronous motor are widely used in industry For high Precision application. * It works on the principle of Magnetic Locking, When two unlike pole are brought near each other, if magnets are strong there exist a tremendous force of attraction between two poles. * If one of the magnet is rotated, the other also rotates in same direction.

- **Reflective Critique:**

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

✓ Students understood the concept which was reflected from their answers for the questions I have asked during discussion session.

- ❖ **Benefit of the practice:** (E.g.: Outcome attainment would have increased due to innovative practice over conventional practice)

Think-pair-sharing forces all students to attempt an initial response to the question, which they can then clarify and expand as they collaborate. It also gives them a chance to validate their ideas in a small group before mentioning them to the large group, which may help shy students feel more confident participating.

- ❖ **Challenges faced in implementation:**

I planned the activity for 10 minutes. But in Class room it takes 15 minutes.

References:

1. A.E. Fitzgerald, Charles Kingsley, Stephen. D. Umans, 'Electric Machinery', Mc Graw Hill publishing Company Ltd, 6th Edition 2017.
2. Stephen J. Chapman, 'Electric Machinery Fundamentals' 4th edition, McGraw Hill Education Pvt. Ltd, 4th Edition 2017.
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Department of Electrical and Electronics Engineering

Academic Year 2022 – 2023 (Even Semester)

Degree, Semester & Branch: IV Semester B.E. EEE

Course Code & Title: EE8405 Electrical Machines II

Name of the Faculty member (s): Mrs. S. Jeyanthi

Innovative Practice Description

- **Unit / Topic:** Unit III / Circle diagram- Step by Step procedure
- **Course Outcome:** CO 3
- **Unit Outcome:** 3c
- **Activity Chosen:** Strip Sequence

- **Justification:**

This activity helps students apply what they have learned through reading or didactic teaching. This approach can strengthen students' logical thinking processes and test their mental model of a process. The activity can be done in pairs or groups.

- **Time Allotted for the Activity:** 05 minutes

- **Details of the Implementation:**

Strip Sequence activities require students to actively engage in their learning, often by connecting their prior knowledge to new information. When creating a Strip Sequence, a student frequently interacts with a textbook, notes from class, an instructor, classmate, or study group.

CO – PO / PSO mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO3	3	2	1	-	-	-	-	-	1	1	-	1	2	-	-

(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	PO9
	1
Justification for correlation	The students can Function effectively as an individual

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

Innovative Teaching Method Execution	
Circle diagram- Step by Step procedure – Strip Sequence	
	<p style="text-align: right;">P. Kali Karthick 953621105028</p> <p>Power circle :</p> <p>The power circle is used for to find the efficiency (η), power factor ($\cos \phi$), Load current, Torque, slip etc.</p> <p>By using the data obtained from the no load test and blocket rotor test.</p> <p>Drawn by using the following steps:</p> <ol style="list-style-type: none"> 1. Take reference phasor V as (y-axis) 2. select suitable current scale. 3. Draw the OO' at an angle of ϕ_0. * Draw the OA line at angle of ϕ_{sc}. 5. Join the line at point of O' and A. 6. To make vertical line from point A to base line. 7. Draw a perpendicular bisector of $O'A$. 8. Draw the circle, with C as a centre and radius equal to $O'C$. 9* Create a torque line with parallel to the line of ML. 10. To join the O and p as load current.

- **Reflective Critique:**

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

Students understood the concept which was reflected from their answers for the questions I have asked during discussion session.

- ❖ **Benefit of the practice:**

The benefits of Strip Sequence are a great way for students to make notes on all of the information they receive. It made the students the general steps involved in the process and make the students to implement the procedure for the particular topic.

- ❖ **Challenges faced in implementation:**

Normally teachers will give longer explanations in the notes section of the topic. The students are made into groups and to arrange the strip of fabrication process for the topic of Circle diagram of 3 phase Induction Motor. I planned the activity for 05 minutes only. But in real scenario it takes 10 minutes

References:

1. A.E. Fitzgerald, Charles Kingsley, Stephen. D. Umans, 'Electric Machinery', Mc Graw Hill publishing Company Ltd, 6th Edition 2017.
2. Stephen J. Chapman, 'Electric Machinery Fundamentals' 4th edition, McGraw Hill Education Pvt. Ltd, 4th Edition 2017.
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Course Code & Title: EE3405 Electrical Machines II

Name of the Faculty member: Mrs. S. Jeyanthi

Innovative Practice Description

- **Unit / Topic: Unit IV / Speed control technique**
- **Course Outcome: CO 4**
- **Topic Learning Outcome: 4c, 4d**
- **Activity Chosen: Mini map**
- **Justification:**

Mini mapping is a creative way to set goals, solve problems and design action plans. It quickly records ideas in a free-form way. When groups use mini mapping, the thoughts of each participant easily trigger ideas in others. This dynamic group interaction encourages breaking free of old patterns to uncover new and innovative approaches. For this topic, there are different types of magnetic material and its characteristics can be brought in to single map for better understanding.

- **Time Allotted for the Activity: 10 minutes**

• **Details of the Implementation:**

Mini mapping activities require students to actively engage in their learning, often by connecting their prior knowledge to new information. When creating a mini map, a student frequently interacts with a textbook, notes from class, an instructor, classmate, or study group.

- In my subject Mini map was conducted for the topic Magnetic materials – Magnetization. The students are voluntarily drawn the map.

• **CO – PO / PSO mapping:**

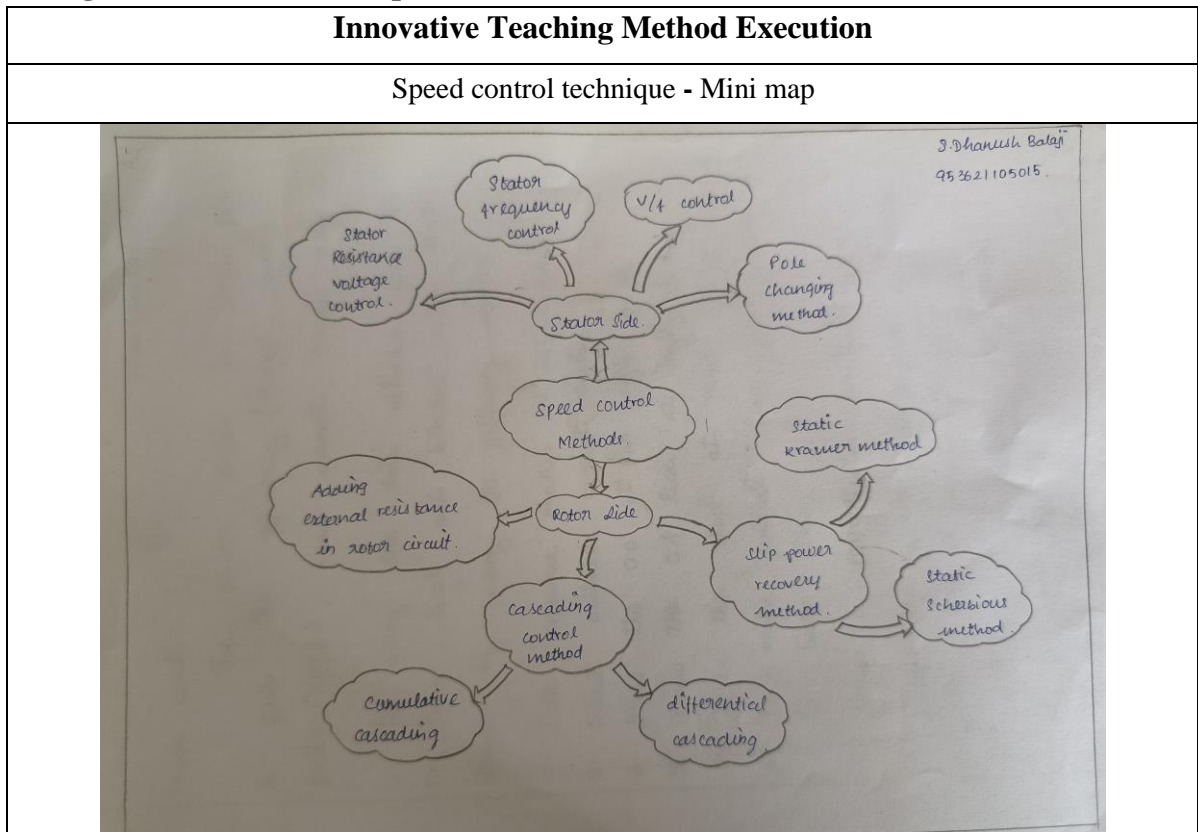
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO4	3	2	1	-	1	-	-	-	1	1	-	1	2	-	-

(1 – Low 2 – Moderate 3 – High)

• **PO / PSO mapped:**

Innovative practice	PO9
	1
Justification for correlation	The students can Function effectively as a team

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



- **Reflective Critique:**

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

Students understood the concept which was reflected from their answers for the questions I have asked during discussion session.

- ❖ **Benefit of the practice:** (E.g.: Outcome attainment would have increased due to innovative practice over conventional practice)

The benefits of Mini Maps are a great way for students to make notes on all of the information they receive. It helps the students to note down only the most important information using key words, and then make connections between facts and ideas visually – keeping all of your topic thoughts together on one sheet. It made key note making easier to students, as it reduces pages of notes into one single side of paper. Also mini map made slow learners to remember the information more quickly.

Challenges faced in implementation:

Normally teachers will give longer explanations in the notes section of the topic. The students are made into groups and to draw the map to indicate relationships between the topics in biomass conversion process. I planned the activity for 10 minutes only. But in real scenario it takes 15 minutes to complete this activity.

References:

1. A.E. Fitzgerald, Charles Kingsley, Stephen. D. Umans, 'Electric Machinery', McGraw Hill publishing Company Ltd, 6th Edition 2017.
2. Stephen J. Chapman, 'Electric Machinery Fundamentals' 4th edition, McGraw Hill Education Pvt. Ltd, 4th Edition 2017.
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Name of the Faculty member (s): Mrs. S. Jeyanthi

Innovative Practice Description

- **Unit / Topic:** Unit V / Starting methods of single-phase induction motors
- **Course Outcome:** CO 5
- **Unit Outcome:** 5c
- **Activity Chosen:** One-minute paper
- **Justification:**

One-minute paper activity provides a conceptual bridge between successive class periods. Improve the quality of class discussion by having students write briefly about a concept or issue before they begin discussing it.

- **Time Allotted for the Activity:** 5 minutes
- **Details of the Implementation:**

At the end of the class, students were asked to write about the topic discussed in the class. The students expressed the understood content and the content which were not clear in that particular topic. This activity shows whether the students can able to understand the specific topic and their involvement the particular class.

- **CO – PO / PSO mapping:**

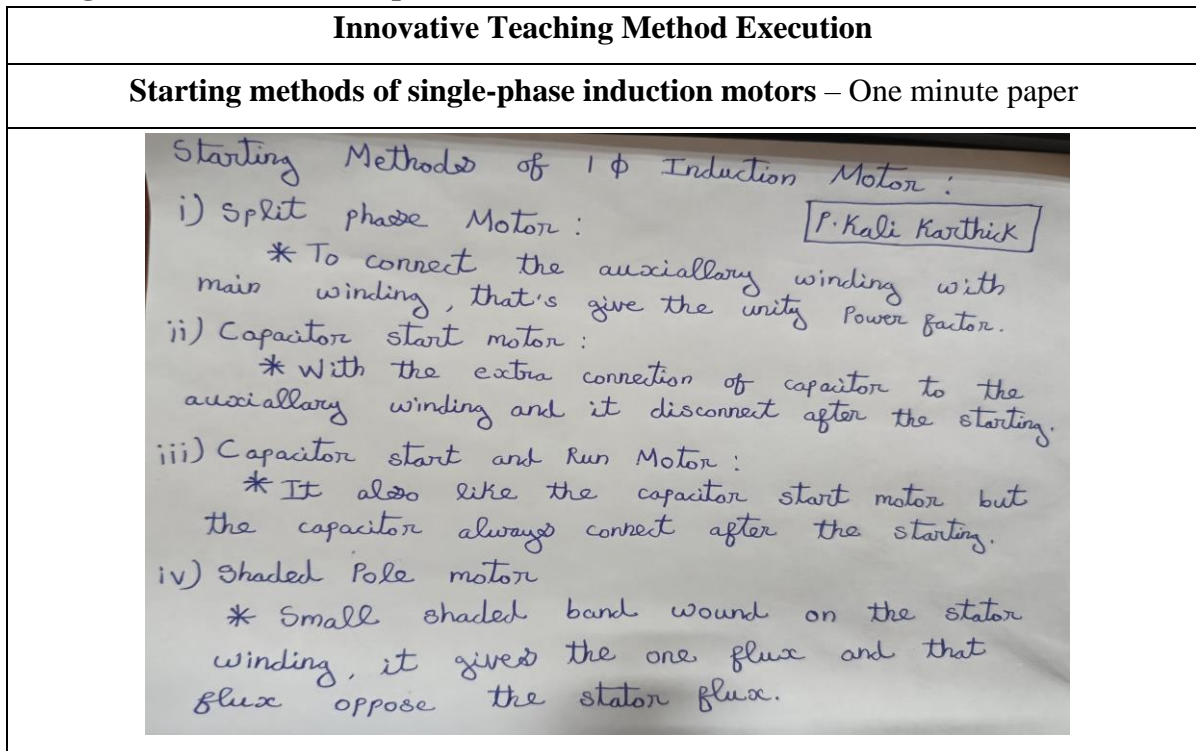
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO5	3	2	1	-	-	-	-	-	1	1	-	1	2	-	1

(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	PO9
	1
Justification for correlation	The students can Function effectively as an individual

- Images / Screenshot of the practice:



- **Reflective Critique:**

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

- ✓ Students understood the concept which was reflected from their answers for the questions I have asked during discussion session.

- ❖ **Benefit of the practice:** (E.g.: Outcome attainment would have increased due to innovative practice over conventional practice)

- ✓ Students can able to attend the question even in the questions are in indirect form.

- ✓ Students can able to explain the concepts in examination without any confusion.

- ❖ **Challenges faced in implementation:**

- ✓ Time utilization for conducting activity.

References:

1. A.E. Fitzgerald, Charles Kingsley, Stephen. D. Umans, 'Electric Machinery', Mc Graw Hill publishing Company Ltd, 6th Edition 2017.
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