DYP DPU

Dr. D. Y. Patil Unitech Society's

Dr. D. Y. Patil Institute of Technology

Pimpri, Pune

Department of Electrical Engineering

Activity: "Innovative Teaching Learning Pedagogy"

Academic Year: 2024-25

Activity Name: Video-Based Learning (VBL)

Subject: Power System-II

Venue: NA

Activity conducted by: Mr. Dushyant A. Patil

Objectives:

- Bridge the gap between theoretical knowledge and real-world engineering practices.
- Provide clear, hands-on illustrations of power system components, operations, and experiments such as load flow analysis, fault analysis, stability studies, and relay coordination.
- Support students, educators, and professionals in comprehending complex power system behaviors through simulations, laboratory setups, and real-time data.
- Foster an engaging and accessible learning experience using multimedia tools and visual storytelling.

Details:

Topic	Link	Likes
Measurement of negative sequence reactance of an salient pole alternator.	Watch here	32
Measurement of Sub transient reactance of salient pole alternator. Add description	Watch here	35
Measurement of zero sequence reactance of an salient pole alternator	Watch here	38
Power Circle Diagram	Watch here	37
Simulation of symmetrical and unsymmetrical fault	Watch here	30
Tree and Links	Watch here	31

Outcome:

- **Demonstrate Understanding of Core Concepts:** Grasp essential topics such as load flow analysis, fault detection, system stability, protection schemes, and reactive power management.
- **Apply Theoretical Knowledge Practically:** Translate classroom learning into real-world scenarios through visualized experiments and simulations.
- **Analyze System Behaviour:** Observe and interpret the response of power system components under various operating conditions and disturbances.
- **Develop Problem-Solving Abilities:** Identify and troubleshoot issues within simulated or experimental power systems.
- **Support Self-Paced and Visual Learning:** Enhance retention and understanding through visual demonstrations that cater to different learning styles.
- **Prepare for Laboratory and Industry Readiness:** Build confidence and readiness for hands-on lab work and real-world engineering tasks in the power sector.

Mapping of Pedagogy with POs and PSOs :

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	Po11	PO12	PSO1	PSO2	PSO3
3.00	2.60	0.80	0.40	1.80				0.40			0.40	3.00	1.80	1.20

Mapping of POs and PSOs with Justification:

Sr. No	Topic	Relevant Program Outcomes	Attainment Level	Justification
1	Measurement of Sub-Transient Reactance	PO1: Engineering Knowledge PO2: Problem Analysis PO5: Modern Tool Usage	PO1 - 3 PO2 - 2 PO5 - 2	PO1: Reinforces electrical engineering principles PO2: Enhances fault study analysis. PO5: Requires hands-on measurement tool experience.
2	Negative and Zero Sequence Reactance	PO1: Engineering Knowledge PO2: Problem Analysis PO3: Design/Development of Solutions PO12: Life-long Learning	PO1 – 3 PO2 – 3 PO3 - 2 PO12 - 2	PO1& PO2: Strong theoretical and practical applications. PO3: Supports fault analysis design. PO12: Encourages continuous learning in power system protection.
3	Tree and Co-Tree Diagram	PO1: Engineering Knowledge PO2: Problem Analysis PO4: Conduct Investigations of Complex Problems	PO1 – 3 PO2 – 2 PO4 - 2	PO1: Builds a strong foundation in network analysis (PO1). PO2: Helps in problem-solving but needs more case studies (PO2, PO4).
4	MATLAB Implementation of Symmetrical and Unsymmetrical Faults	PO1: Engineering Knowledge PO2: Problem Analysis PO5: Modern Tool Usage PO9: Individual and Team Work	PO1 – 3 PO2 – 3 PO5 – 3 PO9 - 2	PO1 &PO2:Hands-on MATLAB simulations reinforce knowledge. Enhances modern tool usage PO9: Encourages teamwork in project-based learning.

5	Power Circle Diagram	PO1: Engineering Knowledge PO2: Problem Analysis, PO3: Design/Development of Solutions PO5: Modern Tool Usage	PO1 – 3 PO2 – 3 PO3 - 2 PO5 - 2	PO1: Provides visualization of power system performance. PO2: Supports problem-solving in power flow and stability studies. PO3:Aids in designing efficient power system operation. PO5: Requires software tools for practical implementation.

Sr. No	Topic	Attainment Level	Justification
1	Measurement of Sub-Transient Reactance	PSO1 PSO2	Involves modeliing and measurement of machine parameters (PSO1) and supports sustainable system design through accurate analysis (PSO2).
2	Negative and Zero Sequence Reactance	PSO1 PSO3	Requires in-depth analysis of fault behaviour (PSO1) and applies to protection systems in broader energy networks (PSO3).
3	Tree and Co-Tree Diagram	PSO1	Enhances analytical understanding of network graphs and system modeliing techniques (PSO1).
4	MATLAB Implementation of Symmetrical and Unsymmetrical Faults	PSO1 PSO2 PSO3	Develops simulation skills (PSO1), fosters innovative problem-solving using tools (PSO2), and integrates cross-domain analysis (PSO3).
5	Power Circle Diagram	PSO1 PSO2	Provides Supports visual system analysis and load management (PSO1) and aids in the design of efficient and sustainable operations (PSO2).

Course Coordinator

DAC

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