



Dr. D. Y. Patil Unitech Society's

Dr. D. Y. Patil Institute of Technology, Pimpri, Pune

Activity: Role-Playing Debate: Lead vs. Lag vs. Lead-Lag

Date & Day: 20/08/2024

Type of Activity: Role-Playing Debate: Lead vs. Lag vs. Lead-Lag

Venue: HVE lab, Electrical Engineering Department

Activity conducted by: Ekta Mishra for ACS subject

Objectives:

- To help students understand the characteristics, advantages, and limitations of Lead, Lag, and Lead-Lag compensators through interactive learning.
- To relate compensator design and application with real-world control system problems in industries such as robotics, aerospace, and power systems.
- To develop critical thinking by comparing performance in terms of stability, transient response, and steady-state accuracy.
- To enhance professional communication, debating skills, and teamwork through role-playing.

Photographs:



Outcome:

- Overall, these outcomes contribute to a well-rounded educational experience, equipping students with essential skills for their academic journey and future professional endeavors.

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Subject Teacher

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Mapping of POs and PSOs with Justification:

POs and PSOs Mapped	Justification
PO8 – Ethics	<i>Justification:</i> Students engaged in a respectful debate, acknowledging the significance of all compensators without dismissing others.
PO9 – Individual and Team Work	<i>Justification:</i> Each student contributed individually while also collaborating within their compensator group.
PO11 – Project Management and Finance	<i>Justification:</i> The debate highlighted cost-performance trade-offs in compensator selection (e.g., Lead-Lag being more complex but versatile).
PO12 – Lifelong Learning	<i>Justification:</i> Students went beyond textbooks, exploring real-world applications of compensators in robotics, aerospace, EV charging, and process industries.
PSO1 – Apply Engineering Knowledge in Control Systems	<i>Justification:</i> Students demonstrated control system concepts (Bode plots, transient response, steady-state error) through practical examples during the debate.
PSO2 – Analyze and Solve Electrical/Control Problems	<i>Justification:</i> By comparing Lead, Lag, and Lead-Lag compensators, students evaluated which design suits specific applications (e.g., motor drives vs aerospace systems).
PSO3 – Professional Skills in Communication and System Design	<i>Justification:</i> Role-playing improved students' ability to explain technical concepts clearly, defend design choices, and present ideas professionally—skills vital in industry and research.

Subject Teacher

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H.O.D