



Finolex Academy of Management & Technology, Ratnagiri

Department of Electrical Engineering

Academic Year 2024-25

Department of Electrical Engineering

MATLAB Workshop with AI, IoT, and Switchgear

Date: 12/02/2025

Venue: EN: 0/6

The workshop on MATLAB Simulink, conducted by **Mr. Ankit Kumar**, Application Engineer Mathwork Design Tech System, aimed to train the faculty at the Department of Electrical Engineering.

The important points that are covered in the Workshop are as follows-

Date	Module	Content
12/02/2025 9 to 11 am	Introduction to MATLAB and AI & Machine Learning in MATLAB	MATLAB Basics & Interface Introduction to MATLAB and Simulink MATLAB programming basics (variables, loops, functions) Data visualization and plotting AI & Machine Learning in MATLAB Basics of AI & ML MATLAB toolboxes for AI (Deep Learning, Statistics, Optimization) Hands-on: Implementing a simple AI model
12/02/2025 11:15 to 1:15 pm	IoT Integration with MATLAB	Understanding IoT and its Role in Industry <ul style="list-style-type: none">IoT components: Sensors, Cloud, ConnectivityOverview of MATLAB IoT tools Hands-on IoT Applications with MATLAB

		<ul style="list-style-type: none"> ● Connecting MATLAB to IoT platforms (ThingSpeak, MQTT, REST API) ● Real-time data acquisition and analysis <p>AI-Driven IoT Applications</p> <ul style="list-style-type: none"> ● Predictive maintenance using AI and IoT ● Anomaly detection in sensor data
12/02/2025 2:15 to 5:15 pm	Switchgear and MATLAB Simulation	<p>Introduction to Switchgear & Power Systems</p> <ul style="list-style-type: none"> ● Basics of switchgear components (circuit breakers, relays, transformers) ● MATLAB tools for electrical simulation <p>Modelling Switchgear in MATLAB/Simulink</p> <ul style="list-style-type: none"> ● Simulating electrical faults ● Protection coordination and relay settings <p>Final Hands-on Project</p>

Conclusion:

This MATLAB workshop provided hands-on experience with AI, IoT, and switchgear simulation, bridging theory with practical applications. Participants gained insights into predictive maintenance, real-time monitoring, and power system modelling. The integration of MATLAB with IoT and AI showcased its potential in industrial automation and smart grids. We hope this knowledge helps you in your projects and career growth. Special thanks to **Mr Ankit Kumar, Design Tech Pune**, for sharing valuable expertise

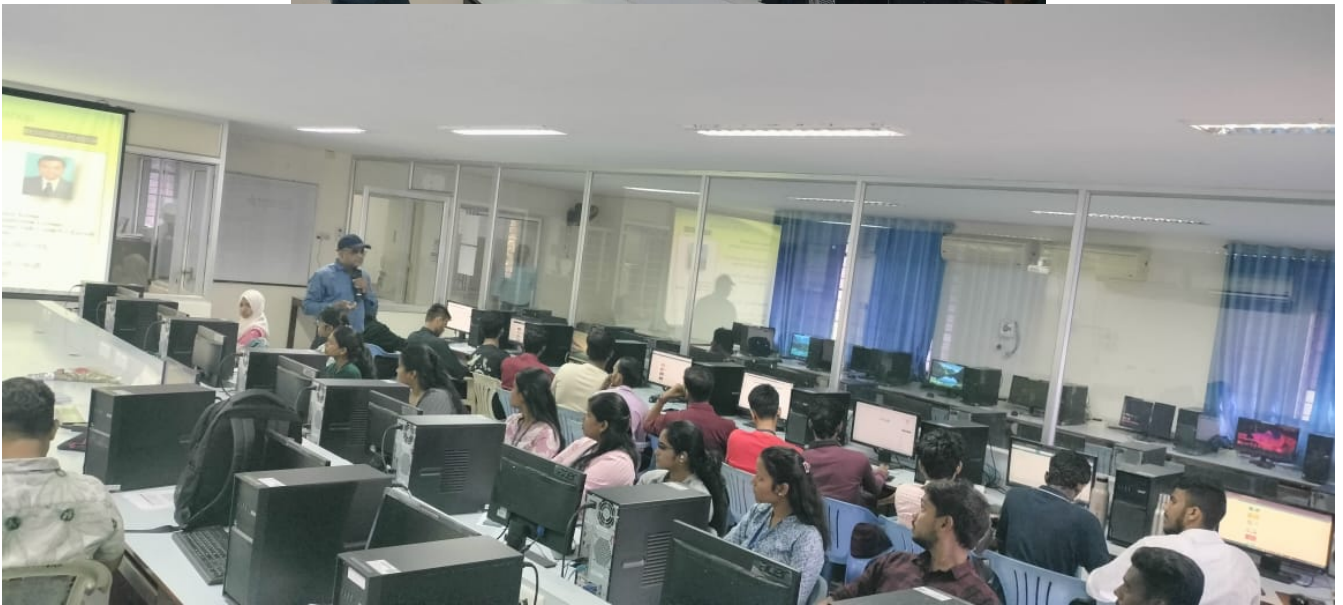
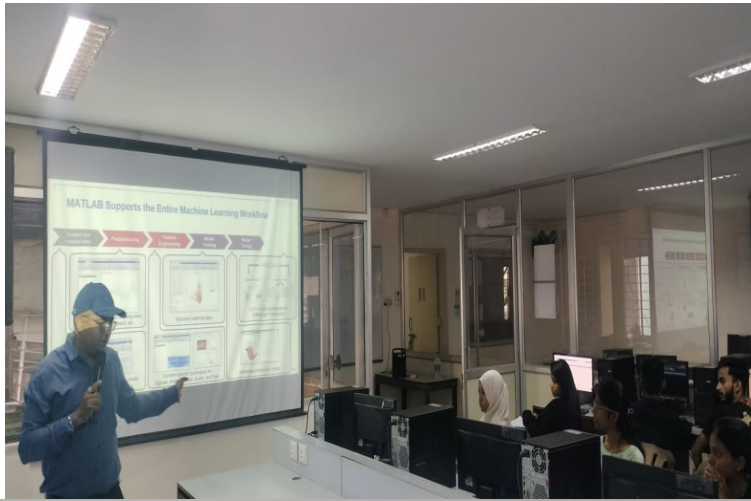
Photos of MATLAB Simulink workshop of Session 1& 2




Fig1: Dr Mane J J welcomes Resource person Ankit Kumar



Fig 2: Mr. Ankit Kumar starting workshop Introduction session 1



<p>Signature and name of convener of authority:</p> <p>HoD/Convener of Committee</p>	
<p>Name of department/committee</p>	<p>EED</p>