MATLAB AND SIMULINK WORKSHOP 2026 SYLLABUS

Day 1 : Introduction to MATLAB Programming
- MATLAB interface, basic operations, variables
- Arrays and matrices
- Programming: scripts, functions, input/output

Day 2 : Programming Logic and Symbolic Computation
- Control flow: conditionals, loops, logical operators
- Symbolic algebra: variables, expressions, differentiation, integration
- Solving symbolic equations, systems of equations
- Data structures: cell arrays, structures; file I/O

Day 3 : Simulink Fundamentals and Basic Circuit Simulation
- Simulink basics, Bridge rectifier, filter circuits.
- Simulink Basics (Sources, Sinks, Blocks, SimScape Electrical)
- Signal Generation (Sine wave, square wave, sawtooth signals)
- Signal Manipulation (Gain, Add, Product)
- Exporting to Workspace, Using the scope
- RL, RC circuits simulation
- Rectifier circuit simulation

Day 4 : Advanced Simulink Applications and System Modeling
- RLC Circuits simulation (Resonance, Parameter Sweep)
- Solving Differential Equations
- Transfer Function and its response (step response of first and second order system)
- Mass-Spring-Damper system
- Low Pass Filter using built-in blocks
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Day 5 : Introduction to Control Systems using Simulink
- Control System Basics
- Open Loop and Closed Loop Speed Control of DC motor