

TECHNOLOGY LEARNING CENTER

..Finishing School for Engineer's

MATLAB

Topic to be covered

- Matlab introduction
- Introduce to different types of tools available in MATLAB
- Basics of MATLAB programming/Simulink.
- Designing of Simple circuits in Simulink
- Steady State Space Analysis of RLC Circuits

Power Systems

- a. Generation/Transmission/Distribution/Protection
- b. HVAC/HVDC
- c. Distributed Generation
- d. Transmission/Distribution/Protection
- e. HVAC/HVDC



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- f. Concepts of Facts(UPFC/SSSC/Statcom/UPQC/TCSC)
- g. Modeling of Facts Devices in Simulink/Matlab
- h. Distributed Generation
- i. Non Conventional Energy Sources
- i. Fuzzy/Neural Networks

Power Electronics

- a. Uncontrollable/controllable Converters
- b. Various PWM Techniques
(PWM/SPWM/SVPWM/DPWM/GDPWM)
- c. Multilevel Inverters
- d. Harmonics, Active/Passive Filters
DC to DC converters(Buck/Buck Boost/Cuk/Sepic)
- e. DC to DC converters(Buck/Buck Boost/Cuk/Sepic)



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- f. Fuzzy/Neural Networks

Electrical Drives and Machines

- a. Basic Concepts of Motor
- b. AC/DC motors
- c. Modeling of Induction Motors
- d. Electrical Drives
- e. Various speed controlling techniques of AC/DC motors
- f. Fuzzy/Neural Networks



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PRACTICALS

LAB-1 (Introduction to all Simulation tools and explanation about tools)

LAB-2 (Rectifiers models designing)

LAB-2 (Inverters And VSI design)

LAB-1 (dc-dc ,dynamic load ,full wave rectifier)



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LAB-2 (different ,H-bridge circuits)

LAB-3 (single phase line, PWM inverter)

LAB-4 (six pulse hvdc, steady state analysis)

LAB-5 (transient analysis, three phase thyristor)

LAB-6 (use of surge arresters, Variable Inductance modeling)



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