

Grid Compliance

Studies

Using PSSE, PSCAD, ETAP

Tools: PSSE, PSCAD, ETAP

Duration: 08 Weeks

Mode: Live Online

+91-8430180594

Electrical Learning Portal | ELP

 +91-8430180594

 info@electricallearningportal.com

 <https://electricallearningportal.com>



Electrical
Learning
Portal

Electrical | Renewable | MEP

ELP is Preparing Engineers for a Sustainable 2050

The world is moving toward a cleaner, smarter, and more sustainable future by 2050, and engineers are driving this transformation. Electrical Learning Portal (ELP) prepares professionals for this change through hands-on, industry-focused training in renewable energy, power systems, and smart grid technologies, empowering engineers to build the sustainable world of tomorrow.



About Us.....

Electrical Learning Portal (ELP) is an ISO-certified institute delivering industry-leading training in Electrical, Renewable Energy, and MEP Engineering. With 10+ years of expertise, our expert educators provide hands-on, real-world learning to prepare engineers for today's dynamic industry. Having trained over 2,000 professionals globally, ELP ensures programs stay current with the latest technologies and trends.



Topics To Be Delivered

Module	Topics / Studies	SIMULATION SOFTWARE			
		PSSE (SS & DY)	PSCAD	ETAP	
1	Introduction and Overview of recent trends in renewables				
	Renewable Sources (PV, Wind, BESS sources)	—	—	—	
	Grid Connection Study and its requirements for different utilities	—	—	—	
	Challenges and their future				
STEADY STATE AND DYNAMIC ANALYSIS					
2	Power System Network , Modelling and Analysis				
	Modelling of Renewable Sources Solar PV, Inverters, BESS Model and Wind Model	PSSE (SS & DY)	PSCAD	ETAP	
	Importance/ Impact of R, L, C parameters (Other Electrical Components)	PSSE (SS & DY)	PSCAD	ETAP	
	Operation and Different modes of operation of Inverter	PSSE (SS & DY)	PSCAD	ETAP	
	Integration of the Power system network with renewable source and grid (Base Case)	PSSE (SS & DY)	PSCAD	ETAP	
	Steady State Analysis and its observations	PSSE (SS & DY)	PSCAD	ETAP	
	Dynamic Analysis and its Observations	PSSE (SS & DY)	PSCAD	ETAP	
	Model Quality test	PSSE (SS & DY)	PSCAD	ETAP	
3	Short Circuit Study				
	Modelling of Inverter and electrical components for SC Study	PSSE (SS & DY)	PSCAD	ETAP	
	Protection Settings of the Inverter	PSSE (SS & DY)	PSCAD	ETAP	
4	Grid Connection Study (Common to all Utility)				

Topics To Be Delivered

Module	Topics / Studies	SIMULATION SOFTWARE		
		PSSE (SS & DY)	PSCAD	ETAP
	Reactive Power Requirement			
	Validation of Q Requirement and Solution	PSSE (SS & DY)		ETAP
	Sizing of Capacitor bank	PSSE (SS & DY)		ETAP
	Modelling and Simulation FACTS Device such as SVC and STATCOM	PSSE (SS & DY)		ETAP
5	Plant - Level Study			
	Voltage Response of the Plant	PSSE (SS & DY)	PSCAD	
	Frequency response of the Plant	PSSE (SS & DY)	PSCAD	
6	Power Quality			
	Harmonic Analysis	PSSE (SS & DY)	PSCAD	
	Filter Design	PSSE (SS & DY)	PSCAD	
	Compliance and non-compliance of the requirements	PSSE (SS & DY)	PSCAD	ETAP
	Solution			
	Power Evacuation Study			ETAP

Topics To Be Delivered

ELECTROMAGNETIC TRANSIENT ANALYSIS (BASICS)				
7	Electromagnetic Transients in Renewable Plants and its impact		PSCAD	
	Switching Studies		PSCAD	
8	CASE STUDY : REAL TIME PROJECTS (30 MW Plant)			
Module	Topics / Studies	SIMULATION SOFTWARE		
	Case 1 : PV Plant	PSSE (SS & DY)	PSCAD	ETAP
	Case 2 : Wind Plant	PSSE (SS & DY)	PSCAD	ETAP
	Case 3 : BESS Plant	PSSE (SS & DY)	PSCAD	ETAP
	Case 4 : Hybrid Plant (PV + BESS, PV + WIND + BESS, WIND + BESS)	PSSE (SS & DY)	PSCAD	ETAP

Future Benefits of This Training

By attending this course, you will gain the skills to analyze and integrate renewable energy systems into transmission grids, ensuring stability, reliability, and compliance with international standards. You will master power flow, fault, dynamic, and transient studies using industry-leading tools like PSSE, ETAP, PSCAD, and DIgSILENT.

These skills will enable you to take on high-demand roles in utilities, consulting, and renewable projects worldwide, lead grid integration and energy transition initiatives, and make data-driven decisions that drive resilient, efficient, and sustainable power systems in the future.



ELP's Corporate Clients in 2025



Contact US

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