

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE PLAN for EEPC25			
Course Title	Power System Analysis		
Course Code	EEPC25	No. of Credits	4
Department	<i>EEE</i>	Faculty	S Arul Daniel
Pre-requisites Course Code	-		
Course Coordinator(s) (if, applicable)			
Other Course Teacher(s)/Tutor(s) E-mail	daniel@nitt.edu	Telephone No.	0431-2503256
Course Type	<input checked="" type="checkbox"/> Core course <input type="checkbox"/> Elective course		
COURSE OVERVIEW			
<p>Power systems is the geographically spread large system that mankind had ever devised. Nation's growth is dependent on its per-capita energy consumption and hence development of power systems is significant. In order to plan for expansion due to the ever increasing consumption of electricity and to operate the system at its best performance, certain studies are essential. This course will give the rudiments of modelling a power system and to use the model in system studies.</p>			
COURSE OBJECTIVES			
<p>To model various power system components and carry out load flow, short-circuit and stability studies.</p>			
COURSE OUTCOMES (CO)			
Course Outcomes	Aligned Programme Outcomes (PO)		
<p>Upon completion of the course, the student will be able to</p> <ol style="list-style-type: none"> 1. Carry out load flow study of a practical system. 2. Simulate and analyze fault. 3. Study the stability of power systems. 	1,5	1,5	1,5

S Arul Daniel

COURSE TEACHING AND LEARNING ACTIVITIES				
S.No.	Week	Topic	Mode of Delivery	
1.	1 and 2	Introduction, one line diagram and per-unit representation of transformers and synchronous machines	Lecture and Tutorial	
2.	3	Y bus formation	Lecture and Tutorial	
4.	4	Static load flow equations, Gauss Seidel method	Lecture, Tutorial and Simulation	
5.	5 and 6	NR method and decoupled load flows	Lecture, Tutorial and Simulation	
6.	7 to 9	Z bus formation and equivalent circuits. Three-phase short circuit studies.	Lecture and Tutorial	
7.	10	Symmetrical components and symmetrical networks	Lecture and Tutorial	
8.	11 and 12	Line to Ground, Line to Line and double line to ground fault studies	Lecture, Tutorial and Simulation	
9.	13	Open circuit faults	Lecture and Tutorial	
10.	14 and 15	Stability studies	Lecture and Tutorial	
11.	16	Group Task Assessment		
COURSE ASSESSMENT METHODS				
S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1.	Summative	End of 6 th week	1 hour	20%
2.	Summative	End of 12 th week	1 hour	20%
3.	Group Tasks	16 th week		20%
4.	Summative	End of 16 th week	2 hours	40%
ESSENTIAL READINGS : Textbooks, reference books Website addresses, journals, etc				
1. John .J. Grainger & Stevenson.W.D., 'Power System Analysis', McGraw Hill, 1 st Edition, 2003.				
2. D P Kothari, I J Nagrath 'Modern Power System Analysis', 3rd Edition, 2011.				
3. Hadi Saadat, 'Power System Analysis ', Tata McGraw-Hill Education, 2nd Edition, 2002				

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