

OURSE CODE: 1151EE309	COURSE TITLE: <b>POWER SYSTEM SIMULATION LAB</b>	L	T	P	C
		0	0	2	1
<b>COURSE CATEGORY:</b>					
Program Core					
<b>PREAMBLE :</b>					
This courses teaches Modelling of Transmission Lines, FACTS devices and Solution of Load Flow analysis					
<b>PREREQUISITE COURSES:</b>					
Circuit Analysis Lab					
<b>RELATED COURSES:</b>					
Power System Operation and Control					
<b>COURSE EDUCATIONAL OBJECTIVES :</b>					
The objectives of the course are to make the students,					
<ul style="list-style-type: none"> <li>• An understanding about transmission line parameters.</li> <li>• Knowledge in formulation of Z bus and Y bus</li> <li>• An understanding about Load flow analysis – GS and NR method using MATLAB</li> <li>• Knowledge on load frequency control</li> <li>• To calculate Short circuit analysis on DC network analyzer ( EMTDC / PSCAD)</li> <li>• Symmetrical component analyzer</li> <li>• To evaluate transient stability using EMTP</li> <li>• An understanding of economic dispatch control using MATLAB</li> </ul>					
<b>COURSE OUTCOMES :</b>					
Upon the successful completion of the course, students will be able to:					
<b>CO Nos.</b>	<b>Course Outcomes</b>	<b>Knowledge Level (Based on revised Bloom's Taxonomy)</b>			
C01	Understand about transmission line parameters.	S3			
C02	Develop Z bus and Y bus	S3			
C03	Apply load frequency control on power system	S3			
C04	Analyze Short circuit on DC network	S3			
C05	understand transient stability	S3			
C06	investigate economic dispatch control	S3			
<b>COURSE CONTENT:</b>					
<b>LIST OF EXPERIMENTS</b>					
<ol style="list-style-type: none"> <li>a. Calculation of transmission line parameters using MATLAB</li> <li>b. Voltage regulation and efficiency calculation of medium, long transmission line using MATLAB</li> <li>c. Formulation of Y bus and Z bus matrix using MATLAB</li> <li>d. Load flow analysis – GS method using MATLAB</li> </ol>					

- e. Load flow analysis – NR method using MATLAB
- f. Short circuit analysis on DC network analyzer ( EMTDC / PSCAD)
- g. Symmetrical component analyzer
- h. Transient stability analysis using EMTP
- i. Load frequency control of single area and two area power system with MATLAB/Simulink
- j. Economic dispatch control using MATLAB

