

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE PLAN – PART I			
Course Title	Power Systems Laboratory		
Course Code	EE608	No. of Credits	02
Pre-requisite subject(s)	Power System Analysis, Transmission and distribution, Switch gear and protection and FACTS		
Session	Jan. 2020	Section (if, applicable)	---
Name of Faculty	Dr. M Jaya Bharata Reddy	Department	EEE
Email	jbreddy@nitt.edu	Telephone No.	0431-2503270
Name of Course Coordinator(s) (if, applicable)	---		
E-mail	---	Telephone No.	---
Course Type	<input checked="" type="checkbox"/> Core course <input type="checkbox"/> Elective course		
Laboratory Experiments			
<ol style="list-style-type: none"> 1. Measurement of A,B,C,D constants of a long transmission line 2. Microprocessor based Static Var Compensator (SVC) 3. Complete protection scheme for generator 4. Study of various faults using DC network analyzer 5. Microprocessor based thyristor controlled series capacitor (TCSC) 6. Operation of microprocessor based numerical over current relay 7. Microprocessor based power factor controller 8. Manual power factor controller 9. Study of power transfer through a short transmission line 10. Study of three zone protection of a numerical distance relay 			
ESSENTIAL READINGS :			
Text Books:			
<ol style="list-style-type: none"> 1. John. J, Grainger & Stevenson. W.D., 'Power System Analysis', McGraw-Hill, 1st Edition, 2003. 2. P. M Anderson, 'Power System Protection', IEEE Press, 2012 3. Hingorani, L.Gyugyi, 'Concepts and Technology of Flexible AC Transmission System', IEEE Press New York, 2000 ISBN-078033 4588. 			

COURSE OBJECTIVES

To understand and analyzing different concepts of the power system which includes generation, transmission and distribution along with control and protection system through the hardware setup.

COURSE OUTCOMES (CO)

1. Practical understanding of different types of electro mechanical and numerical relays.
2. Practical understanding about transmission line fault analysis, power flow and different type of compensations on transmission lines.
3. Prepare laboratory reports that clearly communicate experimental information in a logical and scientific manner

Aligned Programme Outcomes (PO)

CO no.	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14
1	H	H	H	M	H	M	M	M	M	L	L	M	M	L
2	H	H	H	M	H	M	M	M	M	L	L	M	M	L
3	H	H	H	M	H	M	M	M	M	L	L	M	M	L

COURSE PLAN – PART II**COURSE OVERVIEW**

To understand and analyzing different concepts of the power system which includes generation, transmission and distribution along with control and protection system through the hardware setup.

COURSE TEACHING AND LEARNING ACTIVITIES

S.No.	Week/Contact Hours	Topic	Mode of Delivery
1	Week 1 (5 contact hours)	COMPLETE PROTECTION SCHEME FOR GENERATOR	Experimental Analysis
2	Week 2 (5 contact hours)	MICROPROCESSOR BASED THYRISTOR CONTROLLED SERIES CAPACITOR (TCSC)	Experimental Analysis
3	Week 3 (5 contact hours)	STUDY OF THREE ZONE PROTECTION OF A NUMERICAL DISTANCE RELAY	Experimental Analysis
4	Week 4 (5 contact hours)	MANUAL POWER FACTOR CONTROLLER	Experimental Analysis

5	Week 5 (5 contact hours)	MEASUREMENT OF A, B, C, D CONSTANTS OF A LONG TRANSMISSION LINE	Experimental Analysis
6	Week 6 (5 contact hours)	MICROPROCESSOR BASED STATIC VAR COMPENSATOR (SVC)	Experimental Analysis
7	Week 7 (5 contact hours)	STUDY OF POWER TRANSFER THROUGH A SHORT TRANSMISSION LINE	Simulation Analysis
8	Week 8 (5 contact hours)	MICROPROCESSOR BASED POWER FACTOR CONTROLLER	Experimental Analysis
9	Week 8 (5 contact hours)	STUDY OF VARIOUS FAULTS USING D.C. NETWORK ANALYZER	Experimental Analysis
10	Week 10 (5 contact hours)	OPERATION OF MICROPROCESSOR BASED NUMERICAL OVER CURRENT RELAY	Experimental Analysis

COURSE ASSESSMENT METHODS

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	A1 (Continuous Assessment)	1 st to 10 th week	Assessment will be carried out along with the course	60
2	A2 Take Home/ Team Task/Mini Project	12 th Week (Work will be carried out along with the course)	60 Minutes	20
3	A3 End Semester Experimentation (Experimental/Simulation)	13 th week	120 Minutes	20

Note:

1. Attending all the assessments (Assessments 1 to 3) are MANDATORY for every student.
2. Students who are absent for regular laboratory sessions have to take steps to REDO the particular experiments by their own efforts and no extra laboratory sessions would be arranged.

COURSE EXIT SURVEY

Shall be obtained at the end of the course.

COURSE POLICY

ATTENDANCE & COMPENSATION ASSESSMENT

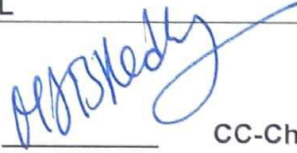
1. Attendance will be taken by the faculty in all the contact hours. Every student should maintain minimum 75% physical attendance in these contact hours to attend the end semester examination.
2. Gradings are assigned as per the institute rules and regulations.

ACADEMIC HONESTY & PLAGIARISM

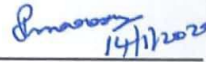
Copying in any form during assessments is considered as academic dishonesty and will attract suitable penalty.

FOR APPROVAL

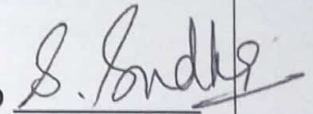
Course Faculty



CC-Chairperson


14/11/2023

HOD



विभाग प्रमुख / Head of The Department
वैद्युतिकी व कणवैद्युतिकी / Department of Electrical And Electronics Engg
राष्ट्रीय प्रौद्योगिकी संस्थान / National Institute of Tech
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तमिलनाडु, भारत / TamilNadu, INDIA