	National Institute of Technology Meghalaya (An Institute of National Importance)	CURRICULUM

Programme	**Bachelor of Technology in Electrical and Electronics Engineering**	Year of Regulation	
Department	**Electrical Engineering**	Semester	**IV**

Course Code	Course Name	Credit Structure				Marks Distribution	
		L	T	P	C	LAB (Continuous Evaluation)	Total
EE 252	**Power System I Lab**	**0**	**0**	**2**	**1**	**100**	**100**

Course Objectives		Course Outcomes		
	To make the students familiar with generation, transmission & distribution of the electrical energy.		CO1	**To analyse electrical distribution networks.**
	To understand the technical and economic aspects of the electrical systems.		CO2	**To calculate and analyse different transmission models.**
			CO3	**To solve power system problems using Matlab software.**

No.	COs	Mapping with Program Outcomes (POs)												Mapping with PSOs		
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	CO1	**3**	**3**	**2**	**3**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**3**	**0**	**0**
2	CO2	**3**	**3**	**3**	**3**	**2**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**3**	**0**	**0**
3	CO3	**3**	**3**	**3**	**3**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**3**	**0**	**0**

SYLLABUS

No.	Content	Hours	COs
1	**To analyse DC distributor (I) fed at only one end and (II) fed at both the end by the feeders.**	**2**	**CO1**
2	**To design and study DC three wire distribution system**	**2**	**CO1**
3	**To design and analyse Ring main distribution system**	**2**	**CO1**
4	**To write a Matlab Program for Corona Loss calculation & Sag and tension calculation.**	**2**	**CO3**
5	**Determination of A, B, C, D parameters, voltage regulation and efficiency of a short/long transmission line model.**	**2**	**CO2**
6	**To find out A, B, C, D parameters, voltage regulation and efficiency of a T and PI transmission line model.**	**2**	**CO2**
7	**To determine surge impedance loading (SIL) of 220 kV transmission network.**	**2**	**CO2**
8	**To perform NO load test and observe ferranti effect.**	**2**	**CO2**
9	**To perform load test and calculate regulation, efficiency of medium transmission line.**	**2**	**CO2**
10	**Voltage regulation using Shunt reactor / shunt capacitor for T/PI transmission networks**	**2**	**CO2**
11	**Voltage regulation using VAR compensator for T/PI transmission networks**	**2**	**CO2**
12	**To study and analyse HVDC transmission networks (Monopolar & Biploar)**	**2**	**CO2**
	Total Hours	**24**	

Essential Readings

1. I.J Nagrath & D.P. Kothari, “Modern Power System Analysis”, Tata McGraw Hill, 4th Edition, 2011.
2. C.L. Wadhwa, “Electric Power System”, New Age International Publishers, 6th Edition, 2010.
3. W. D. Stevenson, “Element of Power System Analysis”, McGraw Hill, 4th Edition, 1982.
4. C.L Wadhwa, “Generation, Distribution and Utilization of Electrical Energy”, New Age International, 4th Edition, 2018.

Supplementary Readings

1. Ashfaq Hussain, “Electric Power Systems”, CBS Publisher & Distributors, 5th Edition, 2017.
2. Arun Ingole, “Power Transmission and Distribution”, Pearson, 1st Edition, 2018.
3. Luces m. Faulkenberry & Walter Coffer, “Electric Power Distribution and Transmission”, Pearson, 2nd Edition, 2007.
4. S.N. Singh, Electric Power Generation, Transmission and Distribution, Prentice Hall India Pvt., Limited, 2nd Edition 2008.
5. S.L Uppal & S.Rao, “Electrical Power Systems”, Khanna Publishers, 15th Edition, 2018