National Institute of Technology Meghalaya

An Institute of National Importance

CURRICULUM

Programme	**Master of Technology in Power & Energy Systems**		Year of Regulation		**2022-23**
Department	**Electrical Engineering**		Semester		**II**

Course Code	Course Name	Pre-Requisite	Credit Structure				Marks Distribution		
			L	T	P	C	Continuous	Exam	Total
EE 565	**Wide Area Monitoring System Lab**	**---**	**0**	**0**	**2**	**1**	**70**	**30**	**100**

SYLLABUS

No.	Content	Hours	
I	**Study of open source PMU**	**02**	
II	**Study of open source PDC**	**02**	
III	**Study of synchronized phasor format according to standards**	**02**	
IV	**Implementation of DFT based phasor estimator to estimate phasor of a given signal**	**02**	
V	**Implementation of DFT based phasor estimator to estimate frequency of a given signal**	**02**	
VI	**Implementation of recursive phasor estimator based on DFT method**	**02**	
VII	**Implementation of an algorithm for Optimal placement of PMU**	**02**	
VIII	**Study of TMS 6678 digital signal processor kit**	**02**	
IX	**Development of generic PMU using DSP kit**	**02**	
X	**Testing of generic PMU using DSP kit under fault environment**	**02**	
	Total Hours	**20**	

Essential Readings

1. Antonello Monti, Carlo Muscas, Ferdinanda Ponci, "Phasor Measurement Units and Wide Area Monitoring Systems", Academic Press, 1st Edition, 2016
2. A. G. Phadke and J. S. Thorp, "Synchronized Phasor Measurements and their Applications", Springer, 2nd Edition, 2008.
3. M. Shadidehpour and Y. Wang, "Communication and Control in Electric Power System", Wiley, 1st Edition, 2001.

Supplementary Readings

1. P. Kundur, "Power System Stability and Control", Tata McGraw Hill, 2nd Edition, 2008.
2. P. M. Anderson and A. A. Fouad, "Power System Control and Stability", Wiley, 3rd Edition, 2006.
3. H. D. Chiang, "Direct Methods for Stability Analysis of Electric Power Systems: Theoretical Foundation, BCU Methodologies, and Applications", Wiley, 2nd Edition, 1999.