	National Institute of Technology Meghalaya An Institute of National Importance	**CURRICULUM**

Programme	**Bachelor of Technology in Electrical and Electronics Engineering**	Year of Regulation	**2013-14**
Department	**Electrical Engineering**	Semester	**IV**

Course Code	Course Name	Credit Structure				Marks Distribution			
		L	T	P	C	INT	MID	END	Total
EE256	**Measurement& Instrumentation Lab**	**0**	**1**	**2**	**2**	**00**	**50**	**50**	**100**

Course Objectives		Course Outcomes		
	Able to calibrate different measuring and indicating instruments with better accuracy.		CO1	**Ability to apply the practical knowledge for calibrating different measuring instruments to measure various parameters.**
	Able to measure Voltage, Current, Power factor , Power and Energy using different measuring instruments		CO2	**Ability to utilize the working principles of AC bridge networks for the measurement of unknown capacitance and operating frequency.**
	Ability to balance AC Bridges to find unknown values		CO3	
			CO4	
			CO5	
			CO6	

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**	**3**	**1**	**3**	**0**	**0**	**1**	**2**	**0**	**0**	**1**	**3**	**3**	**2**
2	CO2	**3**	**3**	**3**	**2**	**3**	**1**	**1**	**1**	**3**	**0**	**0**	**1**	**3**	**3**	**2**
3	CO3	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4	CO4	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5	CO5	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
6	CO6	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

SYLLABUS

No.	Content	Hours	COs
I	**Calibration of A.C. energy meter (a) direct loading, (b) Phantom loading**	**03**	**CO1**
II	**Set up for measurement of power in 3-phase circuit**	**03**	**CO1**
III	**Set up for calibration of AC single phase energy meter**	**03**	**CO1**
IV	**Set up for measurement of power using instrument transformer**	**03**	**CO1**
V	**Set up for calibration of Dynamometer type wattmeter using potentiometer**	**03**	**CO1**
VI	**Set up for calibration of Moving Iron type ammeter and voltmeter using potentiometer**	**03**	**CO1**
VII	**Measurement of Capacitance using Schering Bridge**	**03**	**CO2**
VIII	**Measurement of Frequency by Wien Bridge**	**03**	**CO2**
	Total Hours	**24**	

Supplementary Readings

1. Sawhney A K : A course in Electrical & Electronic Measurements & Instruments; Dhanpat rai and sons.
2. Wolf, Stanley, and Richard FM Smith. Student reference manual for electronic instrumentation laboratories. Pearson/Prentice Hall, 2004.