

# GOVERNMENT POLYTECHNIC ASTHAWAN, NALANDA

## (Department of Electrical Engineering)

<b>Semester:</b>	<b>3rd Electrical</b>
<b>Subject:</b>	<b>Electrical Measurements</b>
<b>Subject Code:</b>	<b>1620303</b>
<b>Lecturer /week :</b>	<b>3</b>
<b>Name of the Faculty:</b>	<b>Chandan Kumar</b>

### Lesson Plan

WEEK	LECTURE NO. ( 1 Hr Each)	UNIT	TOPIC OF CLASS & DISCUSSION	TEACHING MODE	
Week 1	1	Unit-1	Purpose of measurement and significance of measurement	Lecture/PPT/ Pdf/Video	
	2		Various effects of electricity employed in measuring instruments.	Lecture/PPT/ Pdf/Video	
	3		Desirable qualities of measuring instruments.	Lecture/PPT/ Pdf/Video	
Week 2	4		Classification of Instruments, Types of errors	Lecture/PPT/ Pdf/Video	
	5		Different types of torque in Analog Instruments.	Lecture/PPT/ Pdf/Video	
	6		Construction and principle of PMMC	Lecture/PPT/ Pdf/Video	
Week 3	7	Unit -2	MI & Dynamometer type Instrument.	Lecture/PPT/ Pdf/Video	
	8		Production of torque :methods.	Lecture/PPT/ Pdf/Video	
	9		Principles of Voltage and Current measurement.	Lecture/PPT/ Pdf/Video	
Week 4	10		Range Extension of Ammeter and Voltmeter	Lecture/PPT/ Pdf/Video	
	11		Range Extension of Ammeter and Voltmeter continue....	Lecture/PPT/ Pdf/Video	
	12		Different Methods of range extension of Ammeter and Voltmeter.	Lecture/PPT/ Pdf/Video	
Week 5	13		Calibration of Ammeter and Voltmeter.	Lecture/PPT/ Pdf/Video	
	14		Instrument transformers (CT & PT)	Lecture/PPT/ Pdf/Video	
	15		Instrument transformers (CT & PT) cont....	Lecture/PPT/ Pdf/Video	
Week 6	16		Unit -3	Concept of power in A.C. Circuit	Lecture/PPT/ Pdf/Video
	17			Principle and Construction of dynamometer type wattmeter	Lecture/PPT/ Pdf/Video
	18			Errors and their compensation.	Lecture/PPT/ Pdf/Video
Week 7	19	Polyphase wattmeter		Lecture/PPT/ Pdf/Video	
	20	Multiplying factor of wattmeter.		Lecture/PPT/ Pdf/Video	
	21	Measurements of power in 3 phase circuit for balanced and unbalanced load by one wattmeter method, two wattmeter method.		Lecture/PPT/ Pdf/Video	

Week 8	22		Effect of power factor variation on wattmeter readings in two wattmeter method.	Lecture/PPT/Pdf/Video
	23		Measurement of reactive power in three phase balance load by one wattmeter method	Lecture/PPT/Pdf/Video
	24		two wattmeter method.	Lecture/PPT/Pdf/Video
Week 9	25		Digital Wattmeter.	Lecture/PPT/Pdf/Video
	26		Concept of electrical energy.	Lecture/PPT/Pdf/Video
	27		Constructional feature & principle of working of single phase induction type energy meter.	Lecture/PPT/Pdf/Video
Week 10	28	Unit -4	three-induction type energy meter.	Lecture/PPT/Pdf/Video
	29		Different types of errors and their compensation.	Lecture/PPT/Pdf/Video
	30		Different types of errors and their compensation.conti.....	Lecture/PPT/Pdf/Video
Week 11	31		Calibration of energy meter.	Lecture/PPT/Pdf/Video
	32		Electronic energy meter.	Lecture/PPT/Pdf/Video
	33		Single phase Power Factor Meter	Lecture/PPT/Pdf/Video
Week 12	34	Unit -5	three phase Power Factor Meter( only dynamometer type)	Lecture/PPT/Pdf/Video
	35		Frequency meter (Weston and Ferro dynamometer type)	Lecture/PPT/Pdf/Video
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Week 13	37		Sychronoscope.	Lecture/PPT/Pdf/Video
	38		Phase sequence Indicator.( Rotating type or non-rotating type)	Lecture/PPT/Pdf/Video
	39		Clip-on-mmeter.	Lecture/PPT/Pdf/Video
Week 14	40		Q-meter.	Lecture/PPT/Pdf/Video
	41		Classification of Resistance, Low, Medium and High Resistance	Lecture/PPT/Pdf/Video
	42		Methods of Measurements of Low, Medium and High Resistance	Lecture/PPT/Pdf/Video
Week 15	43	Unit -6	Methods of Measurements of Low, Medium and High Resistance	Lecture/PPT/Pdf/Video
	44		Measurement of Earth resistance- Earth test	Lecture/PPT/Pdf/Video
	45		Digital Multimeter.	Lecture/PPT/Pdf/Video
	46		Introduction to A.C. Bridges	Lecture/PPT/Pdf/Video

Week 16	47		A.C. Bridges. continue..	Lecture/PPT/ Pdf/Video
	48		L.C.R. Meter.	Lecture/PPT/ Pdf/Video