

# KIIT POLYTECHNIC, BHUBANESWAR

## LESSON PLAN

Session (2022-2023)

<b>Discipline: Electrical Engg.</b>	<b>Semester:</b> 4th, Summer/2023	<b>Name of the Teaching Faculty:</b> Manoj Kumar Behera Lecturer <b>Email ID: manojbeherafel@kp.kiit.ac.in</b>
<b>Subject: Electrical Measurement &amp; Instrumentation</b> , Theory-3	<b>No. of Days/Week: 05</b>	<b>Start Date: 13/02/2023</b> <b>End Date: 23/05/2023</b>

Week	Class Day	Theory Topics
1st	1st	Define Accuracy, Precision, Errors, Resolution, Sensitivity, Tolerance.
	2nd	Classifications of measuring Instruments, Deflecting arrangements of indicating types of instruments
	3rd	Controlling arrangements of indicating type of instruments, Spring control, Gravity control
	4th	Damping arrangements of indicating type of instruments
	5th	Calibration of instruments
2nd	1st	Construction and principle of operation of PMMC instruments
	2nd	Construction and principle of operation of PMMC instruments
	3rd	Construction and principle of operation of MI type instruments (Attraction type)
	4th	Construction and principle of operation of MI type instruments (Repulsion type)
	5th	Rectifier type Instruments
3rd	1st	<i>Doubt Clearing class</i>
	2nd	Dynamo meter type watt meter, errors and correction.
	3rd	<i>Assignment Evaluation &amp; Class Test</i>
	4th	Principles of Dynamo meter type of instruments
	5th	Dynamo meter type watt meter

4th	1st	Dynamo meter type watt meter, errors and correction
	2nd	Dynamo meter type watt meter, errors and correction
	3rd	<i>Doubt Clearing class</i>
	4th	<i>Assignment Evaluation &amp; Class Test</i>
	5th	<i>QUIZ Test-1</i>
5th	1st	Principles of Induction type of instrument
	2nd	Induction type watt meter
	3rd	Induction type watt meter errors and correction
	4th	LPF type Watt meter/UPF type watt meter
	5th	Induction type watt meter
6th	1st	Errors & compensation
	2nd	Extension of range of instruments by shunts
		Extension of range of instruments by multipliers
	3rd	Construction and principle of operation of Energy meter.
	4th	Errors of energy meter,compension,adjustments
	5th	Testing of energy meter.
7th	1st	Testing of energy meter.
	2nd	Electrical Resonance type frequency meter
	3rd	Single phase power factor meter
	4th	Three phase power factor meter
	5th	Mechanical Resonance type frequency meter
8th	1st	<i>Assignment Evaluation &amp; Class Test</i>
	2nd	Electrical Resonance type frequency meter
	3rd	Single phase power factor meter
	4th	Three phase power factor meter
	5th	Classification of resistance, Different methods used for measurement of resistance.
9th	1st	<i>QUIZ Test-2</i>
	2nd	Measurement of low resistance by potentio meter method.
	3rd	Loss of charge method
	4th	Construction and working principles of Megger
	5th	Construction and working principles of Earth tester

10th	1st	Measurement of inductance by Maxwell's bridge method.
	2nd	Measurement of inductance by Anderson bridge method
	3rd	Measurement of inductance by Owens bridge method.
	4th	Measurement of capacitance by Shearing bridge method
	5th	Measurement of capacitance by Shearing bridge method
11th	1st	Define Transducer, sensing element, transduction element
	2nd	classification of Transducer,
	3rd	Resistive transducer, linear potentiometer
	4th	Angular potentiometer
	5th	Resistance thermometer
12th	1st	Thermistor
	2nd	Linear variable differential Transformer
	3rd	General principle of Capacitive Transducer.
	4th	<i>Assignment Evaluation &amp; Class Test</i>
	5th	Variable area capacitive Transducer
13th	1st	Wire resistance strain gauge
	2nd	Piezo electric Transducer
	3rd	Hall Effect Transducer.
	4th	<i>Assignment Evaluation &amp; Class Test</i>
	5th	Principle of operation of CRT
14th	1st	Principle of CRO
	2nd	Measurement of DC voltage
	3rd	Measurement of DC current
	4th	Measurement of A.C voltage and current
	5th	Measurement of AC voltage, current and frequency.
15th	1st	<i>Assignment Evaluation &amp; Class Test</i>
	2nd	<i>Discussion of Previous year questions</i>
	3rd	<i>Discussion of Previous year questions</i>
	4th	<i>Discussion of Previous year questions</i>
	5th	<i>Discussion of Previous year questions</i>