

# **Teaching Plan**

## **AY 2019-20**



Estd: 2009

JNTUH College Code: 6C

An ISO 9001:2015 Certified Institution

## **PRIYADARSHINI INSTITUTE OF SCIENCE AND TECHNOLOGY FOR WOMEN**

(Approved by AICTE, New Delhi and Affiliated to JNTUH Hyderabad)

SaiPrabhath Nagar , Khammam Rural -507003, Khammam Dist., Telangana State.

Website: [www.priw.ac.in](http://www.priw.ac.in) Email Id: [jks\\_edu@yahoo.com](mailto:jks_edu@yahoo.com) Cell: +91-92466 25050.

### **LESSON PLAN**

**Name of the Faculty:** Mrs.Nasemunisa

**Subject Code:** EE501PC

**Subject Name:** Electrical Measurements & Instrumentation

**Academic Year:** 2019-20

**B.Tech III Year I Sem**

S. No	Unit No.	Topics to be covered	Ref	Teaching Method
1.	<b>I</b>	Introduction to Measuring Instruments: Classification – deflecting	T1, R1	Chalk and Talk
2.		Control and damping torques	T1, R1	Chalk and Talk
3.		Ammeters and Voltmeters	T1, R1	Chalk and Talk.
4.		PMMC, moving iron type instruments	T1, R1	Chalk and Talk
5.		Expression for the deflecting torque and control torque	T1, R1	Chalk and Talk
6.		Errors and compensations	T1, R1	Chalk and Talk
7.		Extension of range using shunts and series resistance	T1, R1	Chalk and Talk
8.		Electrostatic Voltmeters-electrometer type and attracted disc type	T1, R1	Chalk and Talk
9.		Extension of range of E.S. Voltmeters.	T1, R1	Chalk and Talk
10.		Revision	T1, R1	Chalk and Talk/ Quiz
11.	<b>II</b>	Potentiometers & Instrument transformers: Principle and operation of D.C. Crompton's potentiometer	T1, R1	Chalk and Talk
12.		Standardization – Measurement of unknown resistance	T1, R1	Chalk and Talk
13.		Current, voltage	T1, R1	Chalk and Talk
14.		A.C. Potentiometers: polar and coordinate type's standardization	T1, R1	Chalk and Talk
15.		CT and PT – Ratio and phase angle errors	T1, R1	Chalk and Talk
		Revision	T1, R1	Chalk and Talk / Quiz





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17.	III	Measurement of Power & Energy: Single phase dynamometer wattmeter	T1, R1	Chalk and Talk
18.		LPF and UPF	T1, R1	Chalk and Talk
19.		Double element and three element dynamometer wattmeter	T1, R1	Chalk and Talk
20.		Expression for deflecting and control torques	T1, R1	Chalk and Talk
21.		Extension of range of wattmeter using instrument transformers	T1, R1	Chalk and Talk
22.		Measurement of active and reactive powers in balanced and unbalanced systems	T1, R1	Chalk and Talk
23.		Single phase induction type energy meter – driving and braking torques	T1, R1	Chalk and Talk
24.		Errors and compensations	T1, R1	Chalk and Talk
25.		Testing by phantom loading using R.S.S. meter	T1, R1	Chalk and Talk
26.		Three phase energy meter	T1, R1	Chalk and Talk
27.		Tri-vector meter	T1, R1	Chalk and Talk
28.		Maximum demand meters.	T1, R1	Chalk and Talk
29.		Revision	T1, R1	Chalk and Talk /Quiz
30.	IV	<b>DC &amp; AC bridges:</b> Method of measuring low	T1, R1	Chalk and Talk
31.		Medium and high resistance	T1, R1	Chalk and Talk
32.		Sensitivity of Wheat-stone's bridge	T1, R1	Chalk and Talk
33.		Carey Foster's bridge, Kelvin's double bridge for measuring low resistance	T1, R1	Chalk and Talk
34.		Measurement of high resistance – loss of charge method.	T1, R1	Chalk and Talk
35.		<b>Measurement of inductance-</b> Maxwell's bridge	T1, R1	Chalk and Talk
36.		Hay's bridge, Anderson's bridge	T1, R1	Chalk and Talk
37.		Owen's bridge	T1, R1	Chalk and Talk





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38.		Measurement of capacitance and loss angle	T1, R1	Chalk and Talk
39.		Desauty's bridge	T1, R1	Chalk and Talk
40.		Wien's bridge, Schering Bridge	T1, R1	Chalk and Talk
41.		Revision	T1, R1	Chalk and Talk/ Quiz
42.	V	Transducers: Definition of transducers	T1, R1	Chalk and Talk
43.		Classification of transducers	T1, R1	Chalk and Talk
44.		Advantages of Electrical transducers	T1, R1	Chalk and Talk
45.		Characteristics and choice of transducers; Principle operation of LVDT and capacitor transducers	T1, R1	Chalk and Talk
46.		LVDT Applications, Strain gauge and its principle of operation	T1, R1	Chalk and Talk
47.		Gauge factor, Thermistors, Thermocouples	T1, R1	Chalk and Talk
48.		Piezo electric transducers	T1, R1	Chalk and Talk
49.		Photovoltaic	T1, R1	Chalk and Talk
50.		Photo conductive cells, and photo diodes	T1, R1	Chalk and Talk
51.		Measurement of Non-Electrical Quantities: Measurement of strain	T1, R1	Chalk and Talk
52.		Gauge sensitivity, Displacement	T1, R1	Chalk and Talk
53.		Velocity, angular velocity	T1, R1	Chalk and Talk
54.		Acceleration, force, torque	T1, R1	Chalk and Talk
55.		Temperature, pressure, vacuum,	T1, R1	Chalk and Talk
56.		Flow and Liquid level.	T1, R1	Chalk and Talk
57.		Revision	T1, R1	Chalk and Talk / Quiz





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### **TEXT BOOKS:**

1. G. K. Banerjee, "Electrical and Electronic Measurements", PHI Learning Pvt. Ltd., 2nd Edition, 2016.
2. S. C. Bhargava, "Electrical Measuring Instruments and Measurements", BS Publications, 2012.

### **REFERENCES:**

1. A. K. Sawhney, "Electrical & Electronic Measurement & Instruments", Dhanpat Rai & Co. Publications, 2005.
2. R. K. Rajput, "Electrical & Electronic Measurement & Instrumentation", S. Chand and Company Ltd., 2007.
3. Buckingham and Price, "Electrical Measurements", Prentice – Hall, 1988.
4. Reissland, M. U, "Electrical Measurements: Fundamentals, Concepts, Applications", New Age International (P) Limited Publishers, 1st Edition 2010.
5. E.W. Golding and F. C. Widdis, "Electrical Measurements and measuring Instruments", fifth Edition, Wheeler Publishing, 2011.



  
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