

GOPAL KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY JEYPORE
 GOURAHARI VIHAR, PO: RANIPUT, JEYPORE – 764 005

LESSON PLAN

Subject: ELECTRICAL MEASUREMENT AND INSTRUMENTATION

Subject Code: EEPC2004

Name of the Faculty: DEBASHIS PRAHARAJ

Semester: 3RD Semester

Branch: ELECTRICAL ENGINEERING

Semester From: Feb to April

No. of Weeks: 15 Weeks

Week	Day	Theory / Practical Topics	Classes
		Module I – Measurement and Measuring Instruments	8
1	1	Measurement, Accuracy and Precision	1
	2	Significant Figures and Types of Errors	1
	3	Standards of Measurement and Measuring Instruments	1
2	1	PMMC and MI Instruments	1
	2	Electrodynamometer Instruments	1
	3	Energy Meters and Wattmeters	1
3	1	Frequency Meters and Power Factor Meters	1
	2	Numerical Problems on Measuring Instruments	1
		Module II – Measurement of R, L, C and Transducers	8
	3	Measurement of Low and Medium Resistance	1
4	1	Measurement of High Resistance and Earth Resistance	1
	2	Measurement of Self and Mutual Inductance	1
	3	Maxwell's and Hay's Bridges	1
5	1	Anderson and Schering Bridges	1
	2	Measurement of Capacitance	1
	3	Strain Gauges and Thermistors	1
6	1	Thermocouples and LVDT	1
	2	Capacitive and Piezo-electric Transducers	1
	3	Hall Effect and Optical Transducers	1
		Module III – Galvanometer and Potentiometer	6
7	1	D'Arsonval and Vibration Galvanometer	1
	2	Ballistic Galvanometer	1
	3	Calibration of Galvanometers	1
8	1	DC Potentiometers	1
	2	AC Potentiometers	1
	3	Numerical Problems on Potentiometers	1
		Module IV – Instrument Transformers and Electronic Instruments	6
9	1	Potential and Current Transformers	1
	2	Ratio and Phase Angle Errors	1
	3	Methods of Minimizing Errors	1
10	1	Amplified DC Meters	1
	2	AC Voltmeters Using Rectifiers	1
	3	True RMS Voltmeter	1
11	1	Digital Multimeter	1
	2	Digital Frequency Meter	1
		Module V – Oscilloscope	2
	3	CRO Block Diagram	1
12	1	Oscilloscope Probes and Techniques	1
	2	Analog and Digital Storage Oscilloscopes	1
	3	Measurement using Oscilloscope	1
13	1	Numerical Problems on Instrumentation	1
	2	Tutorial on Transducers	1
	3	Tutorial on Electronic Instruments	1
14	1	Viva and Doubt Clearing	1

	2	Assignment Discussion	1
	3	Revision Session	1
15	1	Model Question Discussion	1
	2	Class Test / Assessment	1
	3	Course Summary and Wrap-up	1

Books Recommended

1. A Course in Electrical and Electronic Measurements and Instrumentation – A. K. Sawhney – Dhanpat Rai & Co.
2. Modern Electronic Instrumentation and Measurement Techniques – Helfrick & Cooper – Pearson Education.
3. Electrical Measurements and Measuring Instruments – Golding & Widdis – Reem Publication.
4. Electronic Instrumentation – H. C. Kalsi – Tata McGraw Hill.
5. Electronic Measurement and Instrumentation – Oliver & Cage – Tata McGraw Hill.