

GOPAL KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY

GOURAHARI VIHAR, PO: RANIPUT, JEYPORE – 764 005

LESSON PLAN

Name of the Subject: ELECTRONICS MEASUREMENT AND INSTRUMENTATION

Name of the Faculty: Suvendu Swain

Semester: 5th Semester

Branch: ETC

Semester From:

No. of Weeks: 15 Weeks

Week	Day	Theory/ Practical Topics	Classes
		UNIT 1-Basics of Measurements	8
1	1.	Accuracy, Precision, resolution, reliability, repeatability	1
	2.	validity, Errors and their analysis	1
	3.	Standards of measurement. Bridge Measurement	1
	4.	DC bridges- wheat stone bridge, AC bridges	1
2	5.	Kelvin, Hay, Maxwell, Schering and Wien bridges	1
	6.	Wagner ground Connection. Electronic Instruments for Measuring Basic Parameters	1
	7.	Amplified DC meter, AC Voltmeter, True- RMS responding Voltmeter	1
	8.	Electronic multi-meter, Digital voltmeter, Vector Voltmeter.	1
		UNIT 2-Cathode Ray Oscilloscope	5
3	9.	Block diagram of CRO, cathode ray tube	1
	10.	Deflection amplifier, Vertical deflection system	1
	11.	horizontal deflection systems, Oscilloscope probes	1
	12.	Measurements with CRO-voltage	1
4	13.	frequency and phase measurements, Digital storage Oscilloscope	1
		UNIT 3-Signal Generator	5
	14.	Sine-wave generator	1
	15.	pulse and square wave generator	1
			1
5	16.	Triangular wave generator	1
	17.	Frequency synthesized signal generator	1
	18.	Frequency divider generator, Function generators	1
		UNIT 4-Frequency And Time Interval Measurement	6
6	19.	Simple frequency counter	1
	20.	extending frequency range of counter	1
	21.	Automatic computing counter	1
	22.	Phase detector	1
			1
		23. Spectrum analyzer	

7	24.	Network analyzer.	1
		UNIT 5-Analog And Digital Data Acquisition Systems	6
	25.	Introduction, Signal conditioning of input	1
	26.	Single channel and multi-channel data acquisition systems	1
	27.	Data conversion,	1
8	28.	ADC	1
	29.	DAC	1
	30.	IEEE-488 GPIB Bus.	1
	31.		1

Books Recommended:

1. A. D. Helfrick, W. D. Cooper, Modern Electronic Instrumentation and Measurement Techniques, PHI
2. D. Patranabis, Principles of Electronic Instrumentation, PHI
3. J. P. Bentley, , Principles of Measurement Systems, Longman Group Ltd. (Pearson Education) , 1995
4. D. A. Bell, Electronic Instrumentation and Measurement, PHI
5. H. S. Kalsi, Electronic Instrumentation, TMH
6. A. K. Sawhney, Electrical and Electronics Measurements and Instrumentation, Dhanpat Rai , 2003