

Bhoj Reddy Engineering College for Women: Hyderabad

Department of Electronics and Communication Engineering

Lesson plan of faculty member for the academic year 2020–21

Class: IV B Tech

Branch-Section: ECE- B

Semester: I

Subject: Electronic Measurements and Instrumentation

Lectures per week: 3

Lecture Number	Topics to be covered	Date (s)
UNIT – I: Block Schematics of Measuring System		
1	Introduction to Measurements and Instruments	03 September 2020
2	Block Schematics of Measuring Systems, Performance Characteristics	05 September 2020
3	Static Characteristics: Accuracy, Precision, Resolution; Problems	7 September 2020
4	Dynamic Characteristics: Repeatability, Reproducibility, Fidelity, Lag	10 September 2020
5	Types of Errors, Gaussian Error, Root Sum Squares formula	12 September 2020
6	Measuring Instruments: DC Voltmeters and Current Meters	14 September 2020
7	D'Arsonval Movement; Problems related to errors	17 September 2020
8	AC Voltmeters and Current Meters; Problems related to Voltmeter and Ammeters	19 September 2020
9	Ohmmeters, Multimeters	21 September 2020
10	Meter Protection, Extension of Range	24 September 2020
11	True RMS Responding Voltmeters, Specification of Instruments	26 September 2020
UNIT-II: Signal Analyzers		
12	Wave Analyzers: AF and HF, Heterodyne Wave Analyzers	28 September 2020
13	Harmonic Distortion Analyzers, Spectrum Analyzers	01 October 2020
14	Applications of Spectrum Analyzers, Problems to determine Dynamic Range	03 October 2020
15	Power Analyzers, Capacitance-Voltage Meters	05 October 2020
16	Oscillators	08 October 2020
17	Signal Generators: AF and RF, Sweep Frequency Generators	10 October 2020
18	Function Generators, Pulse and Square wave Generators	12 October 2020
19	Arbitrary Waveform Generator, Video Signal Generators and Specifications	15 October 2020
UNIT-III: Oscilloscopes and Special Purpose Oscilloscopes		
20	Introduction, Oscilloscope Block Diagram	26 October 2020
21	Cathode Ray Tube (CRT), Lissajous Figures	29 October 2020
22	Time Base Circuits, CRO Probes, High Frequency CRO Considerations	31 October 2020
23	Delay lines, Applications, Measurement of Time	09 November 2020
24	Period and Frequency Specifications Dual Trace, Dual Beam CROs,	12 November 2020
25	Sampling Oscilloscopes, Storage Oscilloscopes, Digital Storage CROs	16 November 2020
UNIT-IV: Transducers		
26	Classification and Selection of Transducers	19 November 2020
27	Oscilloscopes, Strain Gauges: Bounded and unbounded	21 November 2020
28	Force Transducers, Displacement Transducers: Capacitive and Inductive	23 November 2020
29	Discussion on Thermistors, LVDT, Piezoelectric Transducers	26 November 2020
30	Resistance Thermometers, Hotwire Anemometers	28 November 2020
31	Thermocouples, Synchros, Special Resistance Thermometers	03 December 2020
32	Seminars Digital Temperature sensing system	05 December 2020
33	Variable Capacitance, Magneto Strictive Transducers	07 December 2020
UNIT-V: Bridges and Measurement of Physical Parameters		

34	Bridge Measurements: Wheat Stone Bridge	10 December 2020
35	Problems related to Bridges	12 December 2020
36	Kelvin Bridge, Maxwell Bridge	14 December 2020
37	Schering, Hay and Wien Bridge	17 December 2020
38	Flow measurement, Measurement of Humidity and Moisture	19 December 2020
39	Displacement Meters, Liquid level Measurement	21 December 2020
40	Velocity, Force, Pressure Measurements	24 December 2020
41	High Pressure, Vacuum level Measurements	28 December 2020
42	Temperature Measurements	31 December 2020
43	Data Acquisition Systems	02 January 2021

Text books:

1. H.S. Kalsi, "Electronic instrumentation", TMH, 2nd Edition, 2004.
2. A.D.Helbins, W.D.Cooper, "Modern Electronic Instrumentation and Measurement Techniques, PHI 5th Edition 2003.
3. K. Lal Kishore, "Electronic Measurements and Instrumentation", Pearson Education, 2010.
4. David A. Bell, "Electronic Instrumentation and Measurements", Oxford Univ. Press, 1997.

Name and signature of the faculty: Shafia Tasneem ----

Name and signature of Head of the Department: Mrs N Shribala ----