

SYLLABUS

Anna University, Chennai

MEASUREMENTS AND INSTRUMENTATION

UNIT I	CONCEPTS OF MEASUREMENTS	9
Instruments: classification, applications – Elements of a generalized measurement system - Static and dynamic characteristics - Errors in measurement -Statistical evaluation of measurement data.		
UNIT II	MEASUREMENT OF PARAMETERS IN ELECTRICAL SYSTEMS	9
Classification of instruments – moving coil and moving iron meters – Induction type, dynamometer type watt meters – Energy meter – Megger – Instrument transformers (CT & PT).		
UNIT III	AC/DC BRIDGES AND INSTRUMENTATION AMPLIFIERS	9
Wheatstone bridge, Kelvin double bridge - Maxwell, Hay, Wien and Schering bridges – Errors and compensation in A.C. bridges - Instrumentation Amplifiers.		
UNIT IV	TRANSDUCERS FOR MEASUREMENT OF NON- ELECTRICAL PARAMETERS	9
Classification of transducers – Measurement of pressure, temperature, displacement, flow, angular velocity – Digital transducers – Smart Sensors.		
UNIT V	DIGITAL INSTRUMENTATION	9
A/D converters: types and characteristics – Sampling, Errors- Measurement of voltage, Current, frequency and phase - D/A converters: types and characteristics- DSO- Data Loggers – Basics of PLC programming and Introduction to Virtual Instrumentation - Instrument standards.		

TOTAL: 45 PERIODS

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