

C. V. RAMAN POLYTECHNIC, BHUBANESWAR

LESSON PLAN Session (2026-2027)

Discipline: ELECTRICAL ENGINEERING	Semester: 3 RD Semester, Winter/2026	Name of the Faculty: RASHMI RANJAN MARTHA ASST.PROF Email ID: Rashmi.martha@cvrp.edu.in
Subject Name with code: ELECTRICAL AND ELECTRONIC MEASUREMENTS (EEPC205)	No. of Days/week: 03 Total No. of Class (Required): 45	Start Date: 01.07.2026 End Date: 05.11.2026

Week	Class Day	Brief description of the Topic/Chapter to be taught
1st	1 st	1. Fundamentals of Measurements Measurement: Significance, units, fundamental quantities and standards
	2 nd	Classification of Instrument Systems
	3 rd	Null and deflection type instruments
2nd	1st	Absolute and secondary instruments
	2 nd	Analog and digital instruments
	3 rd	Static and dynamic characteristics, types of errors
3rd	1st	Calibration: need and procedure
	2 nd	Classification of measuring instruments: indicating, recording and integrating instruments
	3 rd	Essential requirements of an indicating instruments
4th	1st	Revision
	2 nd	2. Measurement of voltage and current DC Ammeter: Basic, Multi range, Universal shunt,
	3 rd	DC Ammeter: Basic, Multi range, Universal shunt,
	1st	DC Voltmeter: Basic, Multi-range, concept of loading effect and sensitivity

5th	2 nd	DC Voltmeter: Basic, Multi-range, concept of loading effect and sensitivity
	3 rd	AC voltmeter: Rectifier type (half wave and full wave)
6th	1st	AC voltmeter: Rectifier type (half wave and full wave)
	2 nd	CT and PT: construction, working and applications
	3 rd	CT and PT: construction, working and applications
7th	1st	Quiz
	2 nd	3. Measurement of Electric Power Analog meters: Permanent magnet moving coil (PMMC) and Permanent magnet moving iron (PMMI) meter, their construction, working, salient features, merits and demerits
	3 rd	Analog meters: Permanent magnet moving coil (PMMC) and Permanent magnet moving iron (PMMI) meter, their construction, working, salient features, merits and demerits
8th	1st	Dynamometer type wattmeter: Construction and working
	2 nd	Dynamometer type wattmeter: Construction and working
	3 rd	Errors and compensations of PMMI, PMMC and Dynamometer type wattmeter
9th	1st	Active and reactive power measurement: One, two and three wattmeter method
	2 nd	Effect of Power factor on wattmeter reading in two wattmeter method
	3 rd	Maximum Demand indicator(Definition only)
10th	1st	Quiz
	2 nd	4. Measurement of Electric Energy Single and three phase electronic energy meter: Constructional features and working principle
	3 rd	Single and three phase electronic energy meter: Constructional features and working principle
11th	1st	Errors and their compensations
	2 nd	Errors and their compensations
	3 rd	Calibration of single-phase electronic energy meter using direct loading.
12th	1st	Calibration of single-phase electronic energy meter using direct loading.
	2 nd	Calibration of single-phase electronic energy meter using direct loading.
	3 rd	5. Circuit Parameter Measurement, CRO and Other Meters Measurement of resistance
13th	1st	Low resistance: Kelvin's double bridge
	2 nd	Medium Resistance: Voltmeter and ammeter method

	3 rd	High resistance: Megger and Ohm meter: Series and shunt
14th	1st	Measurement of inductance using Anderson bridge (no derivation and phasor diagram)
	2 nd	Measurement of capacitance using Schering bridge (no derivation and phasor diagram)
	3 rd	Single beam/single trace CRO (Working principle and block diagram only)
15th	1st	Digital storage Oscilloscope: Basic block diagram, working, Cathode ray tube, electrostatic deflection, vertical amplifier, time base generator, horizontal amplifier, measurement of voltage/ amplitude/ time period/ frequency/ phase angle delay line, specifications
	2 nd	Other meters: Earth tester, Digital Multimeter; L-C-R meter, Frequency meter (ferromagnetic and Weston type), Phase sequence indicator, power factor meter (single phase and three phase dynamometer type), Synchro scope, Tri-vector meter
	3 rd	Signal generator: need, working and basic block diagram.



Signature of the Faculty



Signature of the H.O.D