

GOVT.POLYTECHNIC, MAYURBHANJ LESSON PLAN-2026-27 (WINTER)

Name of the Faculty : Anup kumar Panda

W.e.f : 01.07.2026 to Date 05.11.2026

Discipline: Mechanical

Subject : M & M

Semester 5th

Month	Week	Day	Unit	TOPIC
July	1st	3rd	Unit - 1	Introduction to measurements: Definition of measurement; Significance of measurement
		5th		Methods of measurements: Direct & Indirect; Generalized measuring system
	2nd	1st		Standards of measurements: Primary & Secondary; Factors influencing selection of measuring instruments;
		3rd		Terms applicable to measuring instruments: Precision and Accuracy, Sensitivity and Repeatability, Range, Threshold, Hysteresis
		5th		calibration; Errors in Measurements: Classification of errors, Systematic and Random error
	3rd	1st		Measuring instruments: Introduction; Thread measurements: Thread gauge micrometer;
		3rd		Angle measurements: Bevel protractor, Sine Bar; Gauges: plain plug gauge, ring Gauge, snap gauge, limit gauge
		5th		Comparators: Characteristics of comparators, Types of comparators; Surface finish: Definition, Terminology of surface finish, Talysurf surface roughness tester
	4th	1st		Co-ordinate measuring machine.
		3rd		Transducers and Strain gauges: Introduction
		5th		Transducers: Characteristics, classification of transducers, two coil self-inductance transducer
August	1st	1st	Unit - 2	Piezoelectric transducer; Strain Measurements: Strain gauge
		3rd		Classification, mounting of strain gauges, Strain gauge rosettestwo and three elements
		5th		Measurement of force, torque, and pressure: Introduction
		1st		Force measurement: Spring Balance, Proving ring, Load cell
	2nd	3rd		Torque measurement: Prony brake, Eddy current, Hydraulic dynamometer
		5th		Class Test - 1
	3rd	1st		Pressure measurement: Mcloed gauge.
		3rd		Applied mechanical measurements: Speed measurement: Classification oftachometers
		5th		Revolution counters, Eddy current tachometers
	4th	1st		Displacement measurement: Linear variable Differential transformers (LVDT)
		3rd		Flow measurement: Rotometers, Turbine meter
		5th		Temperature measurement: Resistance thermometers, Optical Pyrometer
September	1st	1st	Unit - 3	Miscellaneous measurements: Humidity measurement: hair hygrometer; Density measurement: hydrometer
		3rd		Liquid level measurement: sight glass, Float gauge
		5th		Internal Assessment - 1
	2nd	1st		Biomedical measurement: Sphygmo monometer
		3rd		Limits, Fits & Tolerances: Concept of Limits, Fits, and Tolerances
		5th		Selective Assembly; Interchangeability; Hole and Shaft Basis System
	3rd	1st		Taylor's Principle; Design of Plug; Ring Gauges
		3rd		IS 919-1993 (Limits, Fits & Tolerances, Gauges) IS 3477-1973; concept of multi gauging and inspection
		5th		Angular Measurement: Concept; Instruments for Angular Measurements; Working and Use of Universal Bevel Protractor
	4th	1st	Unit - 4	Sine Bar, Spirit Level;
		3rd		Principle of Working of Clinometers; Angle Gauges (With Numerical on Setting of Angle Gauges).
		5th		Screw thread Measurements: ISO grade and fits of thread; Errors in threads; Pitch errors
October	1st	1st		Measurement of different elements such as major diameter, minordiameter, effective diameter, pitch
		3rd		Two wire method; Thread gauge micrometer;
		5th		Working principle of floating carriage dial micrometer
	2nd	1st		Gear Measurement and Testing: Analytical and functional inspection; Rolling test
		3rd		Measurement of tooth thickness (constant chord method)
		5th		Gear tooth vernier; Errors in gears such as backlash, runout, composite
	3rd	1st		Machine tool testing: Parallelism; Straightness; Squareness
		3rd		Coaxiality; roundness; run out
		5th		alignment testing of machine tools as per IS standard procedure.
	4th	1st	Unit - 5	Revision of unit - 1
		3rd		Internal Assessment - 2
		5th		Revision of unit - 2
November	1st	1st		Revision of unit - 3
		3rd		Class Test - 2

Subject Expert,
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