

GOVT.POLYTECHNIC NAYAGARH

DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN

SUBJECT: METROLOGY AND MEASUREMENT LAB (PR-1)

PERIODS: 4P/WEEK

SEMESTER: 5TH

NAME OF FACULTY: ABINAS NAYAK, LECTURER STAGE I

SEMESTER FROM: 14/07/2026 to 15/11/2026

NO. OF WEEKS: 15

Week	Class Day	Theory / Practical Topics
1st	1st Period	Measure the diameter of a wire using micrometre and compare the result with digital micrometre (Theory of Experiment)
	2nd Period	Wire diameter measurement using micrometre (Practical Session)
2nd	1st Period	Wire diameter measurement (Practical Session continued)
	2nd Period	Micrometre measurements (Checking Lab Record with Viva Voce)
3rd	1st Period	Measure the dimensions of ground MS flat/cylindrical bush using Vernier Caliper compare with Digital/Dial Vernier Caliper (Theory of Experiment)
	2nd Period	Vernier Caliper measurement of MS flat/cylindrical bush (Practical Session)
4th	1st Period	Vernier Caliper measurement (Practical Session continued)
	2nd Period	Vernier Caliper measurements (Checking Lab Record with Viva Voce)
5th	1st Period	Measure the angle of the machined surface using sine bar with slip gauges (Theory of Experiment)
	2nd Period	Angle measurement using sine bar (Practical Session)
6th	1st Period	Angle measurement using sine bar (Practical Session continued)
	2nd Period	Sine bar measurements (Checking Lab Record with Viva Voce)
7th	1st Period	Measure the angle of a V-block / Taper Shank of Drill / Dovetail using universal bevel protractor (Theory of Experiment)
	2nd Period	Universal bevel protractor measurements (Practical Session)
8th	1st Period	Universal bevel protractor measurements (Practical Session continued)
	2nd Period	Bevel protractor measurements (Checking Lab Record with Viva Voce)
9th	1st Period	Measure the geometrical dimensions of V-Thread using thread Vernier gauge (Theory of Experiment)
	2nd Period	Geometrical dimensions of V-Thread (Practical Session)
10th	1st Period	Geometrical dimensions of V-Thread (Practical Session continued)
	2nd Period	V-Thread dimensions (Checking Lab Record with Viva Voce)
11th	1st Period	Measure the thickness of ground MS plates using slip gauges (Theory of Experiment)

	2nd Period	Thickness measurement using slip gauges (Practical Session)
12th	1st Period	Thickness measurement using slip gauges (Practical Session continued)
	2nd Period	Slip gauge measurements (Checking Lab Record with Viva Voce)
13th	1st Period	Pending Practical Sessions / Repeat Experiments
	2nd Period	Pending Practical Sessions / Repeat Experiments
14th	1st Period	Revision of Major Experiments
	2nd Period	Revision of Major Experiments
15th	1st Period	Revision & Catch-up
	2nd Period	Final Lab Record Submission / Review

REFERENCES:

1. Engineering Metrology - R. K. Jain
2. Engineering precision metrology - R. C. Gupta
3. A Hand book of Industrial Metrology - ASME

Abinas Nayak
24/6/26

ABINAS NAYAK
(LECTURER STAGE I)