

GOVERNMENT POLYTECHNIC JAJPUR

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DEPARTMENT OF PRECISION MANUFACTURING ENGINEERING

LESSON PLAN (2025-26)

Discipline: PME	Semester: 3rd	Name of the Teaching faculty: Manas Kumar Mishra
Subject: Engineering Metrology	No of Days/Week class alloted: 3	Semester from Date: 14/07/25 To Date: 15/11/25 No of weeks: 18
Week	Class Day	Topics
1st	1st	Introduction to metrology, Definition, types, need of inspection
	2nd	Terminologies
	3rd	Methods of measurement,
2nd	1st	Selection of instruments, measurement errors, units
	2nd	Measurement standards, calibration
	3rd	Statistical concepts in metrology
3rd	1st	Linear metrology, Steel rule, calipers
	2nd	Vernier caliper
	3rd	Vernier height gauge
4th	1st	Vernier depth gauge
	2nd	Micrometers
	3rd	Universal caliper
5th	1st	Interchangeability, selective assembly
	2nd	limits, fit and tolerances
	3rd	limit gauging, computer aided tolerancing
6th	1st	Measurement of straightness, flatness
	2nd	Measurement of squareness, parallelism, roundness
	3rd	Measurement of cylindricity, non-contact profiling systems
7th	1st	Measurement of surface finish, Introduction
	2nd	Terminology, specifying roughness on drawings
	3rd	Surface roughness parameters, factors affecting surface roughness.
8th	1st	Ideal surface roughness, roughness measurement methods
	2nd	Precautions in measurement
	3rd	Surface microscopy, surface finish software
9th	1st	Screw thread metrology, Introduction
	2nd	Screw thread terminology
	3rd	Screw thread measurement
10th	1st	Gear measurement, Introduction
	2nd	Types of gears
	3rd	Gear terminology

11th	1st	Gear terminology
	2nd	Errors in gears
	3rd	Advanced measurement of spur gear
12th	1st	Taper measurement
	2nd	Taper measurement
	3rd	Angle measurement
13th	1st	Angle measurement
	2nd	Radius measurement
	3rd	Radius measurement
14th	1st	Advanced measuring machines, CNC systems, Laser vision
	2nd	In-process gauging, 3D metrology, metrology software
	3rd	Nano technology instrumentation, stage position metrology, testing and certification services
15th	1st	Optical system design, lens design, coating design
	2nd	Precision lens assembly techniques
	3rd	Complex opto mechanical assemblies
16th	1st	Contact bonding and other joining technologies.
	2nd	Probable question discussion
	3rd	VST

Wish
10.7.21
Sign of Teacher