



Techno India N.J.R. Institute of Technology

Academic Administration of Techno N.J.R. Institute

Syllabus Deployment

Name of Faculty	: Mrs. Abhishek Sharma	Subject Code: 5ME4-23
Subject	: Production Engineering Lab	
Department	: Mechanical Engineering	Sem: V
Total No. of Lectures Planned: 13		

COURSE OUTCOMES:

At the end of this course students will be able to:

CO1: Perform Linear and Angular measurements.

CO2: Understand the concept of Slip gauges.

CO3: Perform tests to measure gear tooth profiles and screw threads.

CO4: To measure flatness and surface defects in the given test specimen

CO5: Force measurements during turning, drilling and milling operations.

LAB No.	Topic
1	Study of various measuring tools like dial gauge, micrometer, vernier caliper and telescopic gauges
2	Measurement of angle and width of a V-groove by using bevel protector
3	(a) To measure a gap by using slip gauges (b) To compare & access the method of small-bore measurement with the aid of spheres.
4	Measurement of angle by using sine bar.
5	(a) Measurement of gear tooth thickness by using gear tooth vernier caliper. (b) To check accuracy of gear profile with the help of profile projector.
6	To determine the effective diameter of external thread by using three-wire method.
7	To measure flatness and surface defects in the given test piece with the help of monochromatic check light and optical flat.
8	To check the accuracy of a ground, machined and lapped surface - (a) Flat surface (b) Cylindrical surface

9	Find out Chip reduction co-efficient (reciprocal of chip thickness ratio) during single point turning.
10	Forces measurements during orthogonal turning.
11	Torque and Thrust measurement during drilling.
12	Forces measurement during plain milling operation
13	Measurement of Chip tool Interface temperature during turning using thermocouple technique

TEXT/REFERENCE BOOKS

1. JAIN R.K., "ENGINEERING METROLOGY", KHANNA PUBLISHERS, 2005.
2. A. K. SAWHNEY, M. MAHAJAN, TEXTBOOK MEASUREMENT AND METROLOGY, DHANPAT RAI & CO.2008.