METROLOGY AND MEASUREMENTS LAB

Course code	20ME3652	Year	III	Semester	II
Course category	Program Core	Branch	ME	Course Type	Lab
Credits	1.5	L-T-P	0-0-3	Prerequisites	Nil
Continuous Internal Evaluation	15	Semester End Evaluation	35	Total Marks	50

Course Outcomes: Upon successful completion of the course, the student will be able to

COs	Statement	Skill	Level	Expt.No
CO1	Use instruments for measuring linear, angular dimensions and surface roughness.	Apply	L3	1-6
CO2	Perform alignment tests on various machine tools.	Apply	L3	7
CO3	Apply standard procedures to calibrate instruments for measuring field quantities.	Apply	L3	8-14

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3-High, 2: Medium, 1: Low)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	1		2	2				2	3		1	3	2
CO2	3	1		2					2	3		1	3	2
CO3	3	1		2	2				2	3		1	3	2

Note: Any ***'SIX'*** experiments from Each Section are to be performed

Syllabus

Expt. No	Contents	Mapped COs
METROLOGY		
1.	Measurement of bore by internal micro metres and dial bore indicator / rollers and slip gauges.	**CO1**
2.	Use of gear teeth vernier callipers for checking the chordal addendum and chordal thickness of spur gear.	
3.	Measurement of linear and angular dimensions using Profile projector / Tool makers microscope.	
4.	Angle and taper measurements by Bevel protractor, Sine bars, spirit level etc.	
5.	Measurement of effective diameter of a thread using Two wire/ Three wire method.	
6.	Surface roughness measurement by Talysurf instrument	
7.	Alignment test on the lathe/milling machine using dial indicators.	**CO2**
MEASUREMENTS		
8.	Calibration of Pressure Gauge using dead weight pressure gauge tester.	**CO3**
9.	Calibration of thermocouple.	
10.	Calibration of LVDT.	
11.	Calibration of capacitive transducer.	
12.	Calibration of photo and magnetic speed pickup transducer.	
13.	Calibration of Strain gauge.	
14.	Measurement of flow using rotameter	