



DEPARTMENT OF MECHANICAL ENGINEERING

VISION

“To incorporate technical & professional skills in Mechanical Engineers to fulfill industrial & social needs”.

MISSION

- *To educate, guide, and mentor the students for academic excellence.*
- *To develop technical skills and discipline among the students as per the requirement of the industry.*
- *To impart ethics & social values by arranging social activity.*

Subject Name: Metrology and Measurement (313316)

Date :-

Assignment No: - 1

Course Outcome: 403.1

Topic Name :- Overview of Metrology and Linear Measurement

1. Define accuracy & precision.
2. Explain types of error
3. State the types of metrology and explain.
4. Explain the working principle of Vernier caliper.
5. Explain the need for inspection in the manufacturing industry.
6. Differentiate between line standard, end standard and wavelength standard.

Date of Submission :-

Assign By :- Mrs.Sarika Tushar Raut



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Subject Name: Metrology and Measurement (313316)

Date :-

Assignment No :- 2

Course Outcome: 403.2

Topic Name :- Gauges and Comparators

1. Explain the working principle of mechanical comparator with neat sketch.
2. Differentiate between mechanical and pneumatic comparator. (atleast four points)
3. Explain Taylor's principle of gauge design with neat sketch.
4. What is Interchangeability ? State its needs in mass production.
5. What is wringing of slip gauges ? Prepare 58.975 mm stack of slip gauges using following slip gauge set M112 :

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Range (mm)	Steps (mm)	Pieces
1.001 to 1.009	0.001	9
1.01 to 1.49	0.01	49
0.5 to 24.5	0.5	49
25, 50, 75, 100	2.5	4
1.0005	–	1
	Total	112

6.

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Subject Name: Metrology and Measurement (313316)

Date :-

Assignment No :- 3

Course Outcome: 302.3

Topic Name :- Angular, Screw Thread, Gear and Surface Finish Measurements

1. Explain Parkinsons Gear Tester.
 2. Draw neat sketch of metric screw thread profile.
 3. Explain the working principle of “Floating carriage micrometer” with neat sketch.
 4. What do you mean by primary and secondary texture ?
Explain with sketch
 5. Explain how will you use sinebar to measure angle component.
 6. Assessment of surface texture is very important in measuring a job .Justify the statement.
-

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Subject Name: Metrology and Measurement (313316)

Date :-

Assignment No :- 4

Course Outcome: 303.4

Topic Name :- Displacement, Temperature and Flow Measurement

1. What is a transducer? State its advantages and disadvantages and also classify it.
 2. Explain the working of LVDT.
 3. Explain construction and working of RVDT.
 4. Describe the working principle of RTD. Explain with a neat sketch.
 5. State law of intermediate temperature.
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6. Explain rotameter.

7. Differentiate between Active Transducer and Passive Transducer.

Subject Name: Metrology and Measurement (313316)

Date :-

Assignment No :- 5

Course Outcome: 302.5

Topic Name :- Miscellaneous Measurements

1. Enlist different type of load cells.
 2. List applications of load cell.
 3. Explain with neat sketch working of eddy current generation type tachometer.
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4. State the advantages of stroboscope.

5. How speed measurement is done by stroboscope.

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