

GUJARAT TECHNOLOGICAL UNIVERSITY

COURSE NAME : ENGINEERING MEASUREMENTS - II

1. RATIONALE :

Work in an industry is characterized by certain specific features which in turn makes certain demands on the technician. First of all, he must be able to accurately measure physical quantities using appropriate measuring equipment. He must perform all experiments and related operations accurately in strict accordance with the relevant manual, standards or text books. Particular care must be taken to use these apparatus/instruments carefully.

This course on Engineering Measurement intends to develop elementary measurement skills in the students. It is an interdisciplinary course emphasizing the development of personal attributes like spirit of enquiry, problem solving etc. Some elementary skills in error analysis, safety precautions and interpretation of results are to be developed through this course.

3. OBJECTIVES :

2. SCHEME OF TEACHING :

Sr. No.	Particulars	Hours
1.	Planning & Introduction	04
2.	Performing Experiments	20
3.	Assessment/Submission	04
Total		28

The students should be able to :

- * Use appropriate units for each physical quantities.
- * Read the physical quantities for basic measuring instruments .
- * Record Observed data in the designed observation table accurately.
- * Compute/Report the results based on the measurements taken accurately wherever necessary.

4. LABORATORY EXPERIENCES :

1. Determination of static friction.
2. Measurement of viscosity of a given liquid.
3. Measurement of pressure by using various instruments.
4. Determination of moment of inertia of flywheel.
5. Measurement of Electrical energy.
6. Measurement of area by Simpson's rule and square method.

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7. Measurement of pH value of a given solution.
8. Measurement of flow rate.
9. Measurement of thermal conductivity of a metal.
10. Determination of percentage of iron in an alloy.
11. Measurement of rate of corrosion for given metals (like copper and aluminium) in acid or alkaline medium.
12. Measurement of power for different speed of a ceiling or a table fan.
13. Measurement of ash content of a given sample of coal.

- Note:**
1. Minimum 10 experiences to be performed during the term in this course from the above given list looking to the available resources at the Polytechnic.
 2. The experiences should be changed every year as far as possible.
 3. Assessment should be continuous and progressive.
 4. Student should be provided an opportunity to take measurement independently.
 5. Lectures should be arranged before starting actual laboratory work.
 6. Practical examination : 50 % marks of term work.