

GUJARAT TECHNOLOGICAL UNIVERSITY (GTU)

I - SEMESTER

Course Title: METROLOGY

(Course Code:1313403)

Diploma Programme in which this course is offered	Semester in which offered
Mechanical (Manufacturing Technology)	First Semester

Module.	Topics	Hours
Module 1	Introduction 1.1 Importance of inspection in Industry	2 h
Module 2	Linear measurements 2.1 Steel rules – steel tape 2.2 Inside and outside Caliper 2.3 Least count - Explanation 2.4 Vernier caliper – Application 2.5 Micrometre – Types and Application 2.6 Care to be taken while Measuring 2.7 Care and Maintenance of Measuring Instruments	5 h
Module 3	Angular Measurement 3.1 Definition of Taper 3.2 Standard Tapers –Metric and Morse 3.3 Angle Measuring Instruments 3.3.1 Bevel Protractor 3.3.2 Vernier Bevel Protractor 3.3.3 Sine bar and Sine Table	4 h
Module 4	Gauges 4.1 Advantages of Gauges 4.2 Go and No go Gauges 4.3 Plug gauges and Ring Gauges 4.4 Radius and Fillet Gauges 4.5 Feeler Gauge 4.6 Thread pitch Gauge 4.7 Care and Maintenance of Gauges	4 h
Module 5	Introduction to Limits and fits 5.1 Elements of Limit System- Normal size, Base size, Actual size 5.2 Tolerance	6 h

	<ul style="list-style-type: none">5.2.1 Definition5.2.2 Bilateral and Unilateral Tolerance5.2.3 High and Low limit size5.2.4 Upper and Lower Deviation <p>5.3 Fits</p> <ul style="list-style-type: none">5.3.1 Definition5.3.2 Clearance Fit5.3.3 Interference Fit5.3.4 Transition Fit5.3.5 Determination of Maximum and Minimum clearance /interference values	
Module 6	<p>JIM 2.3.9 Quality Control</p> <p>6.1 Quality Control JIM No 2.3.9</p> <p>JIM Content to be used for Technical Knowledge and Communication Skills</p>	3 h