

GUJARAT TECHNOLOGICAL UNIVERSITY (GTU)

I – SEMESTER

Course Title: Manufacturing Engineering - I

(Course Code: 1313406)

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

Module	Topics	Hours
Module 1	Safety 1.1 Personal safety 1.2 Shop floor (Mechanical & Electrical) 1.3 Accident prevention 1.4 Loading and unloading practices 1.5 Identification of unsafe condition and unsafe acts 1.6 Videos on safety	2 h
Module 2	Hand Tools 2.1 Files – types, specification, application 2.2 Hammers – types, specification, application 2.3 Spanners - types, specification, application 2.4 Screw drivers - types, specification, and application 2.5 Torque wrenches - types, specification, application	6 h
Module 3	Marking Tools 3.1 Dot Punch 3.2 Centre Punch 3.3 Scriber 3.4 Number and Letter Punch	2 h
Module 4	Fasteners 4.1 Types, Specification and Application of Following 4.1.1 Screws, Bolts and Nuts 4.1.2 Washers 4.1.3 Locking Devices 4.1.4 Circlips	4 h
Module 5	Drilling 5.1 Drilling machine –Types, Application, Specification 5.2 Drill – Nomenclature 5.3 Tool holding and Work holding Methods 5.4 Drilling Operations 5.4.1 Drilling	6 h

	<p>5.4.2 Counter Sinking 5.4.3 Counter Boring 5.4.4 Spot Facing 5.4.5 Reaming 5.4.6 Tapping 5.5 RPM calculation 5.6 Defects in drilling – Reasons and Remedies</p>	
Module 6	<p>Turning 6.1 Lathe and its specification 6.2 Types of lathes 6.3 Turning operation 6.3.1 Facing 6.3.2 Plain turning 6.3.3 Step turning 6.3.4 Taper turning 6.3.5 Grooving 6.3.6 Thread cutting 6.4 Tool Nomenclature 6.5 Work holding devices 6.6 Tool holding devices 6.7 RPM Calculation</p>	6 h
Module 7	<p>Milling 7.1 Types of Milling machines, Specification and Application 7.2 Work holding and tool holding devices 7.3 Types of Milling cutters and Application 7.4 RPM Calculation</p>	6 h
Module 8	<p>Grinding 8.1 Types of Grinding Machines, Specification and Application 8.2 Grinding Operations 8.3 Types of grinding wheels, Specification and Application 8.4 Work holding and wheel mounting methods</p>	6 h
Module 9	<p>JIM Contents 9.1 Things you wear and Use - JIM 2.3.4 9.2 Manual Labor - JIM2.3.5 9.3 How to Operate Machines -JIM2.3.6</p>	10 h