GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Bachelor of Vocation (B.Voc.), 4th Semester
Branch: Production Technology
Subject Name: Machining and Machine Tools Lab
Subject Code: 21140305

Type of course: Under Graduate

Prerequisite: Machining and Machine Tools

Rationale: Students will be able to apply basics of metal machining processes very well. They can have enough knowledge of different forces acting during machining. They can interpret and utilize the economics of machining. They are able understand the usefulness of Jig & Fixtures, Presses & Press work and various forces acting during cutting.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
				Theory Marks		Practical		
L	T	P	C	ESE(E)	PA(M)	PA(V)	PA(I)	
-	-	2	2	-	-	30	20	50

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

Contents:

Sr. No.	Practical / Hands on Exercise	Total Hrs.	% Weightage
1.	Study of various types of cutting tools and measurement of tool geometry	4	15
2.	To Understand the Effect of Chosen Parameters on the type of chip produced	4	15
3.	Measurement of cutting forces in turning using Lathe Tool Dynamometer under various cutting conditions.	6	20
4.	Measurement of cutting forces in drilling using Dynamometer under various cutting conditions.	6	20
5.	Design a Jig and Fixture for given component	4	15
6.	To study about press tool	4	15
	Total	**28**	**100**

Major Equipment:

1. Lathe and drill tool dynamometer
2. Press tool, with simple die and punches
3. Jigs and Fixtures

GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Bachelor of Vocation (B.Voc.), 4th Semester
Branch: Production Technology
Subject Name: Machining and Machine Tools Lab
Subject Code: 21140305

Course Outcomes:

Students will be able to:

Sr. No.	CO Statement	Marks % Weightage
CO-1	To understand basics of metal machining processes and tool geometry	30
CO-2	Students are able to understand different forces acting while metal cutting and also able to apply knowledge to economic metal cutting	50
CO-3	Students are able to understand the usefulness and design of locating and fixing devises.	10
CO-4	To learn in depth about press and press work	10

References:

1. Production Technology - H.M.T. By HMT
2. Production Technology by R.K. Jain, Khanna Pub
3. Fundamentals of machining and machine tools, by Boothroyd - CRC publication

List of Open Source Software/learning website:

1) NPTEL tutorials