



Type of course: Engineering Science

Prerequisite: Zeal to learn the subject

Rationale: Metal forming in manufacturing and considers a metal-forming process as a system consisting of several interacting variables. These Includes an overall review and classification of all metal-forming processes. Since metal forming process is an important manufacturing route to fabricate bulk storage and processing equipment's. The subject focuses on knowledge and understanding of various manufacturing techniques and equipment's, the underlying principles and their relative merits and demerits. It also helps them to understand the advancement of technology in manufacturing.

Teaching and Examination Scheme:

Teaching Scheme			Credits C	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
				ESE (E)	PA (M)	ESE (V)	PA (I)	
3	0	0	3	50	0	0	0	50

Sr. No	Topic	No. of Hours
01	Rolling- Introduction, Types of rolling, Hot rolling, Two high reversing mill, Three high mill, Continuous mill, Roll bending	04
02	Forging- Introduction, Advantages of Forging, Application of Forging, Limitations of Forging, Upsetting, Hollow Forging, Impression die or closed, Methods of Forging, Drop Forging, Press Forging, Hammer and press Forging, Hot bar Forging, Upset Forging	07
03	Extrusion- Direct and forward, Sleeve method of direct, Indirect or backward, Impact Extrusion, Tube Extrusion, Stepped Extrusion, Combined forging and Extrusion	07
04	Drawing- Wire Drawing, Cupping and Bending, Tube Drawing, Spinning, Hot and cold Spinning Advantages of Metal Spinning	06
05	Pipe and Tube Production- Manufacturing of seamless pipe- Butt welded pipe- Lap welded pipe.	06

Distribution of marks weightage for cognitive level:

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
10	20	20	-	-	-



GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Bachelor of Vocation (B.Voc), 4th Semester

Branch: Production Technology

Subject Name: Metal Forming Processes

Subject Code: 1140303

**With effective
from academic
year 2018-19**

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Reference Books:

1. Elements of Workshop Technology Vol-I By Hazra Choudhury
2. Manufacturing Technology ,Vol-I By P.N.Rao
3. Metal Forming Processes by G. R. Nagpal

Course Outcome:

Sr. No.	CO statement	Marks % weightage
CO 1	To learn and understand Rolling	15
CO 2	To study the forging process with its application	25
CO 3	To learn and understand the extrusion process	20
CO 4	To study the drawing process with its application	20
CO 5	To understand concept of Pipe and Tube Production	20

List of Open Source Software/learning website:

<https://nptel.ac.in>,