



GUJARAT TECHNOLOGICAL UNIVERSITY
Syllabus for Bachelor of Vocation (B.Voc), 1st Semester
Branch: Production Technology
Subject Name: Machining
Subject Code: 21110307

**With effective
from academic
year 2021-22**

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
			ESE (E)	PA (M)	PA(V)	PA (I)		
00	00	15	15	00	00	100	100	200

L- Lectures; P- Practical; OJT- On Job Training; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

Content:

Sr. No.	Topic	No. of Hours	% Weightage
1	<p>Workshop Technology</p> <p>Introduction to Hand Tools, Introduction to files, Classification and specification file, (Length, cut, grade, shape) Types of filing (Straight filing, Cross filing, Draw filing). Advantages and disadvantages of filing. Marking procedure, Instruments used for marking, Safety of keeping marking tools.</p> <p>Demonstrate the cutting tool materials. Types of Cutting Tools, Single Point Cutting tools, Demonstrate the parts of lathe machine and their function, Demonstrate standard operating procedure (SOP) for lathe, Types of Lathe Operation. Work holding and tool holding devices, Accessories and attachment used in lathe, Tools used in lathe, Grinding of Single point cutting tool. Different turning operation performed on lathe like facing, turning, chamfering, center drilling, in between center turning. Forming operation like Radius Forming, Grooving, Knurling, Die Passing, Thread Cutting, Drilling and Boring. Demonstrate the de-burring process after every machining process. De-burring process, Coolants and Lubricants, Accessories and Attachments</p> <p>Demonstrate to operate the milling machine and follow SOP. Identify the parts and its function of milling machine and follow the SOP for manufacturing. Classification and Specifications, Different operations performed, Work holding and tool holding devices (v-blocks, vices, fixtures, stub arbors, collet adaptors) used on it, Classification of milling i.e. Face milling, Peripheral milling (up& down milling) profile milling, Explain about milling machine operations and its attachments, Calculation of RPM &feed, Different milling operation like Slot Milling, Special Milling.</p> <p>Demonstrate to operate the shaper machine and follow SOP. Identify the parts and its function of shaper machine and follow the SOP for manufacturing.</p> <p>Demonstrate operation on grinding machine. Identify the parts and its function of grinding machine and follow the SOP for</p>	120	60



GUJARAT TECHNOLOGICAL UNIVERSITY
Syllabus for Bachelor of Vocation (B.Voc), 1st Semester
Branch: Production Technology
Subject Name: Machining
Subject Code: 21110307

**With effective
from academic
year 2021-22**

	<p>operation, Types of grinding (surface grinding, reference grinding, slot grinding), work holding devices, Advantages and disadvantages of grinding, Safety precaution to be taken during grinding, Angular grinding by using Sine vice.</p> <p>Introduction to Drilling process, Tools used in drilling, Checking the tool by using point angle gauge, Assembly of all the parts, Finding the problems and remedies of that.</p> <p>Demonstrate the de-burring process after every machining process. De-burr and check whether the sharp edges are removed out from the work-piece after machining.</p>		
2	Workshop Calculation and Job preparation Units, ratio & proportion, density, Percentage, menstruation, trigonometry, graph. Preparation of Job using Lathe Machine Preparation of Job using Milling Machine	60	30
2	Workshop Safety Importance of safety & general precaution observed in the industry/shop floor. Introduction to first aid, Introduction of PPE. Introduction of 5S, concept & application.	10	5
3	Soft Skill Introduction to communication skills, Motivational Training, Behavioral Skills, English Literacy.	10	5

Reference

CERTIFICATE COURSE IN MACHINING (NSQF Level 5)