



**Type of course:** Engineering Science

**Prerequisite:** Zeal to learn the subject

**Rationale:** : They are able understand the usefulness of Jig & Fixtures, Locating and clamping devices, Types of tools and various forces acting during cutting, its importance, application advantages and economy aspect in production. Jigs and fixture plays an import roll in this process. Therefore this course attempts to develop abilities in students to select a tool of proper size and shape for required machining operation. The design of cutting tools, jigs and fixtures are also dealt with in this course.

**Teaching and Examination Scheme:**

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

Sr. No	Topic	No. of Hours
01	<b>Tool holders:</b> Tool holders for turning and milling carbide inserts-types, ISO-designation and applications, Tool holding and tool mounting systems for conventional milling and drilling machine tools.	4
02	<b>Locating and clamping devices:</b> Concept, meaning and definitions of location and clamping, Use of locating and clamping principles in day-to-day supervision on shop floor, Degree of freedom-concept and importance, 3-2-1 principle of location, Locators-Types, Sketches with nomenclature, Working, Applications, Fool proofing and ejecting	8
03	<b>Clamping devices:</b> Types, Sketches with nomenclature, Working, Applications	2
04	<b>Jigs and Fixtures:</b> Concept, meaning, differences and benefits of jigs and fixtures, Types, sketches with jigs, nomenclature, working and applications of Types, sketches with nomenclature, working and applications of fixtures.	8
05	<b>Design of Jigs and Fixtures:</b> Steps in designing jigs and fixture for given simple component	8

**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	-	-	-

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.



**GUJARAT TECHNOLOGICAL UNIVERSITY**

**Syllabus for Bachelor of Vocation (B.Voc), 4<sup>th</sup> Semester**

**Branch: Production Technology**

**Subject Name: Mass Production Devices**

**Subject Code: 1140301**

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

**Reference Books:**

1. Mass Production ,phaidon
2. Jigs and fixtures by P. H. Joshi

**Course Outcome:**

Sr. No.	CO statement	Marks % weightage
CO 1	To study various types of tool holders	15
CO 2	To understand Locating and clamping devices.	25
CO 3	To understand and design Jigs and Fixtures	60

**List of Open Source Software/learning website:**

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