

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC SEMESTER : VII

MECHANICAL ENGINEERING

Subject Name: **PRODUCTION TECHNOLOGY**

Sr. No.	Course Contents	Total Hrs
1.	THEORY OF METAL CUTTING: Principles of metal machining, cutting tools and tool materials, tool signature, mechanics of chip removal, cutting forces and parameters effecting it, cutting fluids, tool wear, tool life, economics of machining. Multi point cutting tools, temperature measurement at tool-work interface and its effects.	10
2.	GEAR AND THREADS MANUFACTURING: Different types of Threads manufacturing methods, and tools involved, Different gear forming and generating methods with their special features, Gears finishing processes.	06
3.	JIGS & FIXTURES: Definition, its usefulness in mass production, design principles, locating systems and types of locators & clamps, jig bushes, design of jigs and fixtures for various machining operations.	08
4.	PRESSES AND PRESS WORK: Classification of presses, Classification of dies, cutting actions in dies, clearance, cutting forces, center of pressure design of press tools, methods of mounting of punches, scrap reduction, strip layout.	07
5.	Controls in Machine tools: , Machine tool drives, Machine tool structures, Machine tool spindles, Special purpose machines , Capstan and turret lathes, single spindle and multi spindle automats, bar type and chucking type machines, Design of cam for single spindle automat Transfer Machines.	06
6.	Non-conventional Machining: EDM, IBM, ECM, ECG, CM, AJM, wire cut EDM, , USM, LBM process principle, process parameters and their applications..	08

Term Work: The term work shall be based on the topics mentioned above.

Practical / Oral: The candidate shall be examined on the basis of term-work.

Text Books:

1. Fundamentals of machining and machine tools, by Boothroyd -CRC publication
2. Metal Cutting principles, by M C Shaw, Oxford University press
3. Production Technology - H.M.T. By HMT

Reference Books:

1. Tool Design by Donaldson, Tata McGraw Hill Pub.
2. Metal cutting Principles by Trent McGraw Hill Pub.
3. Workshop Technology Vol.II by Raghuvanshi , Dhanpat rai Pub.
4. Production Technology by R.K.Jain, Khanna Pub