

GOVT.POLYTECHNICAMIRPUR (H.P)

GOVT. POLY-TECHNIC HAMIRPUR		PLANNED SYLLABUS COVERAGE				
		Department: Mechanical Engg. Subject – Advance Manufacturing Processes.				
		Course - Diploma		Duration – 3 Years		
SYLLABUS COVERAGE		Total Periods -56		Theory –56 hours		
Sr No	Period Nos	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
1	1-14	Jigs & Fixtures	Definition of jig; Types of jigs: Leaf jig, Box and Handle jig, Template jig, Plate jig, Indexing jig, Universal jig, Vice jigs; General consideration in the design of drill jigs; Drill bush; Types of fixtures: Vice fixtures, Milling fixtures, Boring fixtures, Grinding fixtures; Basic principles of location; Locating methods and devices; Basic principles of the clamping; Types of clamps: Strap clamps, Cam clamps, Screw clamps, Toggle clamps, Hydraulic and Pneumatic clamps.	Production Technology, Tata Mc-Graw Hill	Production Technology, Tata Mc-Graw Hill	
2.	15-23	Plastic Processing	Processing of plastics; Moulding processes: Injection moulding, Compression moulding, transfer moulding; Extruding; Casting; Fabrication methods-Sheet forming, Blow moulding, Laminating plastics(sheets, rods & tubes), Reinforcing; Applications of Plastics.	Advanced manufacturing technology- David L. Goetsch		
3	24-34	Modern Machining Processes	Principle, Description and applications of Ultrasonic Machining, Electric Discharge Machining, Wire cut EDM, Abrasive Jet Machining, Laser Beam Machining, Electro Chemical Machining.	Non conventional Machining-P.K. Mistra		

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4	35-45	CNC Milling Machines	Vertical and horizontal machining center: Constructional features, Axis identification, Electronic control system. Automatic tool changer and to magazine. CNC programming: Preparatory functions (G code) , miscellaneous functions (M code), Part programming.	CNC machines– Pabla B.S. & M. Adithan.	Exploring Advanced Manufacturing Technologies– Stephen F.Krar & Arthur Gil	
5	46-56	Special Purpose Machines (SPM):	Concept, General elements of SPM, Productivity improvement by SPM, Principles of SPM design. Maintenance of Machine Tools: Types of maintenance, Repair cycle analysis, Repair complexity, Maintenance manual, Maintenance records, Housekeeping. Introduction to Total Productive Maintenance (TPM)	Manufacturing Technologies– Stephen F.Krar & Arthur Gil		