

GOVERNMENT POLYTECHNIC JAJPUR

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DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN

Discipline: Mechanical	Semester: 4th	Name of the Teaching faculty: Manas Kumar Mishra
Subject: Manufacturing Technology(T H2)	No of Days/Week class allotted: 3	Semester from Date: 14/03/22 30/06/22 To date: No of weeks: 16
Week	Class Day	Topics
1st	1st	i) introduction to manufacturing technology
		ii) importance of this subjects, Cos
		iii) syllabus description of each module
		iv) discussion about lesson plan, examination, tests, assignments
1st	2nd	i) Composition of various tool materials
	3rd	i) composition and properties of various tool materials ii) recent developments in tool materials
	4th	i) Physical properties & uses of such tool materials.
	2nd	1st
2nd		ii) Cutting action of various hand tools: dies and reamers
3rd		i)Turning tool geometry ii) tool nomenclature iii) various angles such as rack angle, side cutting edge angle
4th		i) side relief , end relief, nose radius, 3D animation, videos ii) purpose of such tool angles
3rd	1st	i) Machining process parameters (Speed, feed and depth of cut) ii) functions of coolant and lubricants
	2nd	i) characteristics of Coolants and lubricants, examples
	3rd	i) Construction and working of lathe ii) Major components of a lathe and their function
	4th	i) Operations carried out in a lathe, job setting, types of tools ii) Turning, thread cutting, internal machining, parting off, facing, knurling
4th	1st	i) taper turning, methods ii) Safety measures during machining
	2nd	i) Capstan lathe, Major components and their function
	3rd	i) Difference with respect to engine lathe ii) multiple tool holders
	4th	i) Turret Lathe, Major components and their function
5th	1st	i) Difference with respect to capstan lathe
	2nd	i) tooling layout for preparation of a hexagonal bolt &bush
	3rd	CLASS TEST 1, previous year question discussion
	4th	i) Potential application areas of a shaper machine
	1st	i) Major components and their functions of a shaper

6th	2nd	i) automatic table feed mechanism
	3rd	i) construction & working of tool head
	4th	i) quick return mechanism (crank and slotted lever mechanism)
7th	1st	i) specification of a shaping machine.
	2nd	i) Application area of a planer
		ii) difference with respect to shaper
	3rd	i) Major components and their functions
4th	i) The table drive mechanism	
8th	1st	i) The table drive mechanism
	2nd	i) Working of tool and tool support
	3rd	i) Clamping of work through sketch
	4th	i) Types of milling machine
9th	1st	i) Operations performed by milling machine
	2nd	i) work holding attachment
	3rd	i) Construction & working of simple dividing head
	4th	i) Construction & working of universal dividing head
10th	1st	i) indexing methods
		ii) Procedure of simple indexing
	2nd	i) Procedure of compound indexing
	3rd	i) Illustration of different indexing methods
11th	4th	i) Major components of a slotter machine
	1st	i) function of those components
		ii) construction of slotter machine
	2nd	i) working principle of slotter
3rd	ii) Tools used in slotter	
12th	4th	CLASS TEST 2, previous year question discussion
	1st	i) Significance of grinding operations
	2nd	i) Manufacturing of grinding wheels
	3rd	i) materials used for manufacturing
13th	4th	i) Criteria for selecting of grinding wheels
	1st	i) Specification of grinding wheels with example
		ii) Working of Cylindrical Grinder
	2nd	ii) working of surface grinder
3rd	i) working of Centreless Grinder	
14th	4th	i) Classification of drilling machines
		ii) working of Bench drilling machine
	1st	i) Pillar drilling machine
		ii) Radial drilling machine
2nd	i) Basic Principle of Boring	
	ii) boring machines	
3rd	i) Different between Boring and drilling	
4th	i) Types of Broaching (pull type, push type)	
1st	i) Advantages of Broaching and applications	

15th	2nd	i) Definition of Surface finish
		ii) various surface finish processes
	3rd	i) Description of lapping & their specific cutting.
	4th	i) Description of lapping
ii) honing process		
16th	1st	CLASS TEST 3, previous year questions discussion

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 FACULTY SIGNATURE