

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 alloted: 4	Semester from Date: _____ 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
	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	i) Cutting action of various hand tools: Chisel, hacksaw blade
	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		
5th	4th	i) Turret Lathe, Major components and their function
	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
1st	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
	3rd	i) working principle of slotter
ii) Tools used in slotter		
4th	CLASS TEST 2, previous year question discussion	
12th	1st	i) Significance of grinding operations
	2nd	i) Manufacturing of grinding wheels
	3rd	i) materials used for manufacturing
	4th	i) Criteria for selecting of grinding wheels
13th	1st	i) Specification of grinding wheels with example
	2nd	i) Working of Cylindrical Grinder
		ii) working of surface grinder
	3rd	i) working of Centreless Grinder
4th	i) Classification of drilling machines	
	ii) working of Bench drilling machine	
14th	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

FACULTY SIGNATURE