

**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: 3	Semester from Date: 16/01/24 To date: 26/04/24 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
2nd	1st	i) Physical properties & uses of such tool materials.
	2nd	i) Cutting action of various hand tools: Chisel, hacksaw blade
	3rd	ii) Cutting action of various hand tools: dies and reamers
	4th	i)Turning tool geometry
		ii) tool nomenclature
		iii) various angles such as rack angle, side cutting edge angle
3rd	1st	i) side relief , end relief, nose radius, 3D animation, videos ii) purpose of such tool angles
	2nd	i) Machining process parameters (Speed, feed and depth of cut) ii) functions of coolant and lubricants
	3rd	i) characteristics of Coolants and lubricants, examples
	4th	i) Construction and working of lathe
		ii) Major components of a lathe and their function
4th	1st	i) Operations carried out in a lathe, job setting, types of tools ii) Turning, thread cutting, internal machining, parting off, facing, knurling
		i) taper turning, methods ii) Safety measures during machining
	3rd	i) Capstan lathe, Major components and their function
	4th	i) Difference with respect to engine lathe ii) multiple tool holders
	5th	1st
2nd		i) Difference with respect to capstan lathe
3rd		i) tooling layout for preparation of a hexagonal bolt &bush
4th		CLASS TEST 1, previous year question discussion
6th	1st	i) Potential application areas of a shaper machine
	2nd	i) Major components and their functions of a shaper
	3rd	i) automatic table feed mechanism
	4th	i) construction &working of tool head

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

15th	2nd	i) Advantages of Broaching and applications
	3rd	i) Definition of Surface finish
		ii) various surface finish processes
4th	i) Description of lapping & their specific cutting.	
16th	1st	i) Description of lapping
		ii) honing process

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13.06.24  
FACULTY SIGNATURE