



GOVERNMENT POLYTECHNIC, PURI

DEPARTMENT OF MECHANICAL ENGINEERING

Discipline: MECHANICAL ENGG	Semester: 4TH	Name of the Teaching Faculty: MR MILAN NARENDRA, PTGF IN MECH. ENGG.	
Subject: Manufacturing Technology (TH. 2)	No. of days/per week class allotted: 04	Semester From date: 10.03.2022 To Date: 10.06.2022 No. of Weeks: 15	
PRE- REQUISITE	Basic knowledge about cutting tools, machine tools, types of machining processes and finishing operations.		
COURSE OUTCOMES	CO1: Understand the required material properties for cutting tool. CO2: Understand the machining mechanism and factors affecting the same. CO3: Understand the working principle of lathe, milling, shaping, planning etc. CO4: Understand the components of machine tool. CO5: To gain knowledge about surface finishing operations and principle involved in it.		
Week	Class Day	Theory / Practical Topics	DELIVERY METHOD
1ST	1ST	Tool Materials - Introduction	Whiteboard
	2ND	Composition of various tool materials	Whiteboard
	3RD	Physical properties& uses of such tool materials.	Whiteboard
	4TH	Physical properties& uses of such tool materials.	Whiteboard
2ND	1ST	Cutting Tools - Introduction	PPT
	2ND	Cutting action of various and tools such as Chisel, hacksaw blade, dies and reamer	Whiteboard
	3RD	Turning tool geometry and purpose of tool angle	Whiteboard
	4TH	Machining process parameters (Speed, feed and depth of cut)	Whiteboard
3RD	1ST	Machining process parameters (Speed, feed and depth of cut)	Whiteboard
	2ND	Coolants and lubricants in machining and purpose	Whiteboard
	3RD	QUIZ & ASSIGNMENT-I	GOOGLE FORMS
	4TH	Lathe Machine - Introduction	PPT
4TH	1ST	Major components of a lathe and their function	Whiteboard
	2ND	Operations carried out in a lathe(Turning, thread cutting, taper turning, internal machining, parting off, facing, knurling), Safety measures during machining	PPT
	3RD	Capstan lathe, Difference with respect to engine lathe, Major components and their function	Whiteboard
	4TH	Define multiple tool holders	Whiteboard
5TH	1ST	Turret Lathe, Difference with respect to capstan lathe	Whiteboard
	2ND	Major components and their function	Whiteboard
	3RD	Draw the tooling layout for preparation of a hexagonal bolt &bush	Whiteboard
	4TH	QUIZ & ASSIGNMENT-II	GOOGLE FORMS
6TH	1ST	Shaper, Potential application areas of a shaper machine	Whiteboard
	2ND	Major components and their function , Explain the automatic able feed mechanism	Whiteboard
	3RD	Explain the construction &working of tool head, Explain the quick return mechanism through sketch	PPT
	4TH	State the specification of a shaping machine.	Whiteboard
7TH	1ST	QUIZ & ASSIGNMENT-III	GOOGLE FORMS
	2ND	Planning Machin, Application area of a planer and its difference with respect to shaper	PPT
	3RD	Major components and their functions, The table drive mechanism	Whiteboard
	4TH	Working of tool and tool support, Clamping of work through sketch.	Whiteboard
8TH	1ST	QUIZ & ASSIGNMENT-IV	GOOGLE FORMS
	2ND	Milling Machine, Types of milling machine and operations performed by them and also same for CNC milling machine	PPT
	3RD	Explain work holding attachment	Whiteboard
	4TH	Construction & working of simple dividing head, universal dividing head	Whiteboard
9TH	1ST	Procedure of simple and compound indexing	Whiteboard
	2ND	Illustration of different indexing methods	PPT
	3RD	Slotter, Major components and their function	Whiteboard
	4TH	Construction and working of slotter machine	PPT

10TH	1ST	Tools used in slotter	Whiteboard
	2ND	QUIZ & ASSIGNMENT-V	
	3RD	Grinding, Significance of grinding operations	Whiteboard
	4TH	Manufacturing of grinding wheels	Whiteboard
11TH	1ST	Manufacturing of grinding wheels	Whiteboard
	2ND	Criteria for selecting of grinding wheels	Whiteboard
	3RD	Specification of grinding wheels with example Working of <input type="checkbox"/> Cylindrical Grinder <input type="checkbox"/> Surface Grinder <input type="checkbox"/> Centreless Grinder	Whiteboard
	4TH	QUIZ & ASSIGNMENT-VI	
12TH	1ST	Internal Machining operations, Classification of drilling machines	Whiteboard
	2ND	Working of <input type="checkbox"/> Bench drilling machine <input type="checkbox"/> Pillar drilling machine <input type="checkbox"/> Radial drilling machine	PPT
	3RD	Boring <input type="checkbox"/> Basic Principle of Boring <input type="checkbox"/> Different between Boring and drilling	Whiteboard
	4TH	Boring <input type="checkbox"/> Basic Principle of Boring <input type="checkbox"/> Different between Boring and drilling	Whiteboard
13TH	1ST	Broaching <input type="checkbox"/> Types of Broaching(pull type, push type) <input type="checkbox"/> Advantages of Broaching and applications	Whiteboard
	2ND	Broaching <input type="checkbox"/> Types of Broaching(pull type, push type) <input type="checkbox"/> Advantages of Broaching and applications	Whiteboard
	3RD	Surface finish, lapping (Introduction)	Whiteboard
	4TH	Definition of Surface finish	Whiteboard
14TH	1ST	Description of lapping& explain their specific cutting.	Whiteboard
	2ND	Description of lapping& explain their specific cutting.	Whiteboard
	3RD	QUIZ & ASSIGNMENT-VII	
	4TH	REVISION	
15TH	1ST	REVISION	
	2ND		
	3RD		
	4TH		

LEARNING RESOURCES:

01. Text book of Workshop Technology by Hazra Choudhary Vol-I & Vol-II, MPP Pvt Ltd. Publisher.
02. Text book of Workshop Technology by W.A.S Champan Vol-I & Vol-II.
03. Text book of Manufacturing Process by P.N Rao, TMH Publisher.

WEBSITE RESOURCES:

01. https://www.youtube.com/watch?v=p_tHtEinuk0&list=PL9H2IJVEqfm8w10EKq2YdtMITDXedmrdb
02. https://www.youtube.com/watch?v=jdFrBIHeJbs&list=PLSGws_74K01-q9nnTMBssGURHawYYQfMQ
03. https://www.youtube.com/watch?v=uQPCdwegXzc&list=PLd_kVCyCUPTfnzJZrEpw0PKbfvO5FJN-L

Milan Narasimha
Sign. Of Concerned Faculty

Sign. Of HOD

Principal
G.P. Puri