


GOVERNMENT POLYTECHNIC JAIPUR
A/ P: Ragadi, Block: Korei, Dist.: Jaipur, Odisha- 755019

DEPARTMENT OF PRECISION MANUFACTURING ENGINEERING

LESSON PLAN

Discipline: PME	Semester: 3rd	Name of the Teaching faculty: Suprava Behera	
Subject-Material Technology	No of Days/Week class allotted: 3	Semester from Date: 14.07.2025 To Date: 15.11.2025	No of weeks: 15
SL.NO	Class/Day	TOPICS TO BE COVERED	
1	1st	Introduction to Machine tools, Differences between machine and machine tools.	
	2nd	Types of cutting tools, Cutting tool materials-properties and types	
	3rd	Cutting tool materials- properties, Single point cutting tool nomenclatures	
2	1st	Cutting tool life and factors affecting tool life and tool wear.	
	2nd	Orthogonal and Oblique cutting, cutting forces in Orthogonal and Oblique cutting	
	3rd	Chip formation process, temperature zone and forces.	
3	1st	Types of chips and factors for producing each chip	
	2nd	Chip breaker and its types.	
	3rd	Introduction to Metal casting and steps involved in casting	
4	1st	Pattern for casting, Pattern making materials	
	2nd	Moulding sand and moulding process	
	3rd	Special casting process- Die casting	
5	1st	Centrifugal casting	
	2nd	Investment casting	
	3rd	Defects in casting and their remedies	
6	1st	Advanced welding processes, Introduction, classification	
	2nd	Resistance welding, Spot and Seam welding	
	3rd	Projection welding , Advanced arc welding types- Shielded metal arc welding	

7	1st	TIG and MIG welding
	2nd	Submerged arc welding and Plasma arc welding
	3rd	Laser beam welding
8	1st	Defects in welding and their remedies
	2nd	Differences between Brazing and Soldering
	3rd	Press work , Introduction
9	1st	Presses Types
	2nd	Simple die, Compound die and Progressive die
	3rd	Power press
10	1st	Press Operations: Shearing, bending
	2nd	Drawing, Punching
	3rd	Blanking and notching
11	1st	Basic concepts of powder metallurgy
	2nd	Methods of powder metallurgy : producing powders
	3rd	Mixing and compacting
12	1st	Sintering
	2nd	Secondary processes
	3rd	Applications, advantages
13	1st	Limitations
	2nd	Economics of powder metallurgy
	3rd	Cutting fluids and Coolants, Introduction
14	1st	Purpose and properties
	2nd	Types of Coolants and lubricants
	3rd	Coolants for different operations
15	1st	Lubricants for different operations
	2nd	Probable question discussion
	3rd	VST


10.07.25
FACULTY SIGNATURE