

**GOVERNMENT POLYTECHNIC JAIPUR**

A/ P: Ragadi, Block: Korei, Dist.: Jajpur, Odisha- 755019

Website: <https://www.gpjajpur.org> E-mail: principalgpjajpur@yahoo.co.in Contact: 9437155107

**DEPARTMENT OF MECHANICAL ENGINEERING**

**LESSON PLAN (2023-24)**

Discipline: Mechanical	Semester: 3rd	Name of the Teaching faculty: Manas Kumar Mishra	
Subject: Production Technology	No of Days/Week class allotted: 4	Semester from Date: 01/08/2023 To Date: 30/11/23 of weeks: 16	
<b>Week</b>	<b>Class Day</b>	<b>Topics</b>	
1st	1st	<b>1. Metal Forming Processes</b>	
		i) Lesson plan, Syllabus	
		ii) Importance of this Course, Course Outcomes	
		iii) Exams, Class Tests	
	2nd	iv) Hot working and cold working process	
		i) Extrusion process	
		ii) Classification of extrusion processes	
3rd	iii) Direct extrusion process		
	i) Indirect extrusion		
2nd	1st	ii) Impact extrusion	
		i) Rolling process	
	2nd	ii) Classification of rolling process	
		i) Cold rolling vs hot rolling.	
3rd	i) Different types of rolling mills used in Rolling process.		
	4th	i) Different types of rolling mills used in Rolling process.	
3rd	1st	<b>2. Welding</b>	
		i) Welding and classification of various welding processes.	
		2nd	i) Function of fluxes used in welding
		3rd	i) Oxy-acetylene welding process
ii) Tools and Safety equipments.			
4th	4th	i) Welding techniques and positions	
		ii) Types of joints and safety measures	
	1st	i) Types of flames used in Oxy-acetylene welding	
		2nd	i) Arc welding process
3rd	ii) Tools and equipments		
	4th	i) Arc welding process parameters	
5th	1st	ii) Safety measures	
		i) Arc welding electrodes.	
	2nd	i) Resistance welding principles	
		ii) Classification of Resistance welding	
3rd	i) Butt welding		
	ii) Flash welding		
4th	i) Projection welding		

	3rd	ii) Seam welding iii) Percutaion welding
	4th	i) TIG welding process ii) Process parameters, TIG welding equipments
6th	1st	i) MIG welding process ii) Process parameters, MIG welding equipments iii) Differences between TIG and MIG welding process
	2nd	i) Welding defects ii) Causes and remedies
	3rd	i) Welding defects, causes and remedies
	4th	i) DT and NDT tests
7th		<b>3. Casting</b>
	1st	i) Defination of casting ii) Classification of casting process
	2nd	i) Procedura of Sand mould casting.
	3rd	i) Different types of molding sands with their composition
	4th	i) Molding sand properties
8th	1st	i) Different types of pattern
	2nd	i) Various pattern allowances
	3rd	i) Classification of core
	4th	i) construction and working of crucible furnace
9th	1st	i) Construction and working of cupola furnace
	2nd	i) Construction and working of cupola furnace
	3rd	i) Die casting methods and principles
	4th	i) Cold chamber die casting, advantages, limitations, applications
10th	1st	i) True centrifugal casting process ii) Semi centrifugal casting
	2nd	i) Centrifuging ii) Various casting defects with their causes and remedies.
	3rd	i) Casting defects, Inspection of Defects.
	4th	<b>CLASS TEST 1</b>
11th		<b>4. Powder Metallurgy</b>
	1st	i) Powder metallurgy process
	2nd	ii) Advantages of powder metallurgy technology technique
	3rd	i) Methods of producing powder from materials
12th	4th	i) Methods of producing components by powder metallurgy technique
	1st	i) Compacting process.
	2nd	i) Sintering process and secondary processes
	3rd	i) Economics of powder metallurgy
	4th	<b>5. Press Work</b>
		i) Press work process and process parameters

13th	1st	i) Blanking operation
		ii) Punching
		iii) Trimming
	2nd	i) Various types of die and punch
	3rd	i) Various types of die and punch, , die set up
	4th	i) Press work on simple dies, parts and their functions.
		ii) Advantages, disadvantages
iii) Applications		
14th	1st	i) Press work on compound dies
		ii) Advantages, disadvantages
		iii) Applications
	2nd	i) Press work on progressive dies
		ii) Advantages, disadvantages
		iii) Applications
	3rd	<b>6. Jigs and fixtures</b>
i) Definations of jigs and fixture		
ii) Advantages of using jigs and fixtures		
4th	i) Principle of locations	
15th	1st	i) Principle of locations
	2nd	i) Methods of location with respect to 3-2-1 point location of rectangular jig
	3rd	i) Various types of jig and fixtures
	4th	i) Various types of jig and fixtures
16th	1st	<b>CLASS TEST 2</b>
	2nd	Previous year questions, Probable exam questions/VST

#### LEARNING RESOURCES

Sl. No.	Author	Title of the book
1	O.P. Khanna	Production Technology, Vol- I& II
2	B.S Raghuwanshi	Workshop technology, Vol- I& II
3	P.N. Rao	Manufacturing technology, Vol I&II
4	P.C.Sharma	Manufacturing technology, Vol- I

*Wsh*  
 Signature of Faculty *26/07/23*  
*M.K Mishra*  
*(lect, mech)*