

GOVERNMENT POLYTECHNIC JAJPUR

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 (2024-25)


Discipline: Mechanical	Semester: 3rd	Name of the Teaching faculty: Manas Kumar Mishra
Subject: Production Technology	No of Days/Week class alloted: 4	Semester from Date: 01/07/2024 To Date: 08/11/24 No of weeks: 16
Week	Class Day	Topics
1st	1st	1. Metal Forming Processes
		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
		iii) Direct extrusion process
	3rd	i) Indirect extrusion
		ii) Impact extrusion
	4th	i) Rolling process
		ii) Classification of rolling process
2nd	1st	i) Cold rolling vs hot rolling.
	2nd	i) Different types of rolling mills used in Rolling process.
	3rd	i) Different types of rolling mills used in Rolling process.
	4th	2. Welding
3rd		i) Welding and classification of various welding processes.
	1st	i) Function of fluxes used in welding
	2nd	i) Oxy-acetylene welding process
		ii) Tools and Safety equipments.
3rd	i) Welding techniques and positions	
	ii) Types of joints and safety measures	
4th		i) Types of flames used in Oxy-acetylene welding
4th	1st	i) Arc welding process
		ii) Tools and equipments
	2nd	i) Arc welding process parameters
		ii) Safety measures
	3rd	i) Arc welding electrodes.
	4th	i) Resistance welding principles
		ii) Classification of Resistance welding

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

12th	1st	i) Sintering process and secondary processes
	2nd	i) Economics of powder metallurgy
	3rd	5. Press Work
		i) Press work process and process parameters
4th	i) Blanking operation	
	ii) Punching	
	iii) Trimming	
13th	1st	i) Various types of die and punch
	2nd	i) Various types of die and punch, , die set up
	3rd	i) Press work on simple dies, parts and their functions.
		ii) Advantages, disadvantages
		iii) Applications
	4th	i) Press work on compound dies
		ii) Advantages, disadvantages
		iii) Applications
14th	1st	i) Press work on progressive dies
		ii) Advantages, disadvantages
		iii) Applications
	2nd	6. Jigs and fixtures
		i) Definitions of jigs and fixture
		ii) Advantages of using jigs and fixtures
	3rd	i) Principle of locations
4th	i) Principle of locations	
15th	1st	i) Methods of location with respect to 3-2-1 point location of rectangular jig
	2nd	i) Various types of jig and fixtures
	3rd	i) Various types of jig and fixtures
	4th	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


 Signature of Faculty
 29.06.24
 (Leet, mech)