

GOVERNMENT POLYTECHNIC JAJPUR

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DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN (2022-23)

Discipline: Mechanical	Semester: 3rd	Name of the Teaching faculty: Manas Kumar Mishra
Subject: Production Technology	No of Days/Week class allotted: 3	Semester from Date: 15/09/22 To Date: 22/12/22 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
2nd	1st	i) indirect extrusion
		ii) impact extrusion
	2nd	i) rolling process
		ii) classification of rolling process
3rd	3rd	i) cold rolling and hot rolling process.
	4th	i) cold rolling and hot rolling process.
	1st	i) different types of rolling mills used in Rolling process.
	2nd	2. Welding
3rd		i) welding and classification of various welding processes.
	3rd	i) function of fluxes used in welding
	4th	i) Oxy-acetylene welding process
		ii) tools and equipments
4th	1st	i) welding techniques and positions
		ii) types of joints and safety measures
	2nd	i) Types of flames used in Oxy-acetylene welding
	3rd	i) Arc welding process
ii) tools and equipments		
4th	i) Arc welding process parameters	
	ii) safety measures	
5th	1st	i) Specification of an arc welding electrodes.
	2nd	i) resistance welding principles
		ii) classification
	3rd	i) butt welding
ii) flash welding		

	4th	i) projection welding
		ii) seam welding
		iii) percutaion welding
6th	1st	i) TIG welding process
		ii) equipments
	2nd	i) MIG welding process
		ii) equipments
		iii) differences between TIG and MIG welding process
	3rd	i) welding defects
		ii) causes and remedies
	4th	i) welding defects, causes and remedies
7th	1st	i) DT and NDT tests
	2nd	3. Casting
		i) defination of casting
		ii) classification of casting process
	3rd	i) procedure of Sand mould casting.
4th	i) different types of molding sands with their composition	
8th	1st	i) molding sand properties
	2nd	i) different types of pattern
	3rd	i) various pattern allowances
	4th	i) Classification of core
9th	1st	i) construction and working of cupola furnace
	2nd	i) construction and working of cupola furnace
	3rd	i) construction and working of crucible furnace
	4th	i) die casting methods and principles
10th	1st	i) cold chamber die casting, advantages, limitations, applications
	2nd	i) True centrifugal casting process
		ii) Semi centrifugal casting
	3rd	i) centrifuging
		ii) advantages, limitations and applications
4th	i) various casting defects with their causes and remedies.	
11th	1st	CLASS TEST 1 (UNIT 1, 2 & 3)
	2nd	4. Powder Metallurgy
		i) powder metallurgy process
	3rd	ii) advantages of powder metallurgy technology technique
4th	i) methods of producing powder from materials	
12th	1st	i) methods of producing components by powder metallurgy technique
	2nd	i) methods of producing components by powder metallurgy technique
	3rd	i) sintering process and secondary processes
	4th	i) Economics of powder metallurgy

13th	1st	5. Press Work
		i) press work process and process parameters
	2nd	i) blanking operation
		ii) punching
		iii) trimming
3rd	i) various types of die and punch	
4th	i) various types of die and punch	
14th	1st	i) press work on simple dies, die set up
		ii) advantages, disadvantages
		iii) applications
	2nd	i) press work on compound dies
		ii) advantages, disadvantages
		iii) applications
	3rd	i) press work on progressive dies
		ii) advantages, disadvantages
		iii) applications
	4th	6. Jigs and fixtures
		i) definitions of jigs and fixture
		ii) advantages of using jigs and fixtures
15th	1st	i) principle of locations
	2nd	i) principle of locations
	3rd	i) methods of location with respect to 3-2-1 point location of rectangular jig
	4th	i) various types of jig and fixtures
16th	1st	i) various types of jig and fixtures
	2nd	CLASS TEST 2 (UNIT 4,5 &6)
	3rd	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