



GOVERNMENT POLYTECHNIC, NABARANGPUR

DEPARTMENT OF AUTOMOBILE ENGINEERING

Discipline: AUTOMOBILE ENGG.	Semester: 3rd	Name of the Teaching Faculty: RABINDRA PRASAD RATH
Subject: PRODUCTION TECHNOLOGY	No. of days/per week class allotted: 4	Semester From date: 16-08-2024 To Date: 08-11-2024 No. of Weeks: 12
COURSE OUTCOMES	CO1: Understand the different components and processes involved in press tool operations. CO2: understand how to minimize the job setting and tool setting times in mass production . CO3: Understand the industrial requirements of fabrication system . CO4 : understand the manufacturing processes like casting and powder metallurgy .	
Week	Class Day	Theory/Practical Topics
1ST	1ST	1.0 Metal Forming Processes 1.1 Extrusion: Definition & Classification
	2ND	1.2 Explain direct, indirect and impact extrusion process.
	3RD	1.3 Define rolling. Classify it.
	4TH	1.4 Differentiate between cold rolling and hot rolling process
2ND	1ST	1.4 Differentiate between cold rolling and hot rolling process
	2ND	1.5 List the different types of rolling mills used in Rolling process.
	3RD	1.5 List the different types of rolling mills used in Rolling process.
	4TH	2.0 Welding 2.1 Define welding and classify various welding processes.
3RD	1ST	2.2 Explain fluxes used in welding.
	2ND	2.3 Explain Oxy-acetylene welding process.
	3RD	Explain various types of flames used in Oxy-acetylene welding process
	4TH	2.5 Explain Arc welding process
4TH	1ST	Explain various types of flames used in Oxy-acetylene welding process
	2ND	2.5 Explain Arc welding process
	3RD	2.6 Specify arc welding electrodes
	4TH	2.7 Define resistance welding and classify it.
5TH	1ST	2.7 Define resistance welding and classify it.
	2ND	Describe various resistance welding processes such as butt welding, spot welding, flash welding, projection welding and seam welding
	3RD	flash welding, projection welding and seam welding
	4TH	2.9 Explain TIG and MIG welding process
6TH	1ST	2.9 Explain TIG and MIG welding process
	2ND	2.10 State different welding defects with causes and remedies.
	3RD	REVISION
	4TH	3.0 Casting 3.1 Define Casting and Classify the various Casting processes.
7TH	1ST	Various Casting processes.
	2ND	3.2 Explain the procedure of Sand mould casting.
	3RD	Explain different types of molding sands with their composition and properties.
	4TH	Explain different types of molding sands with their composition and properties.
8TH	1ST	3.4 Classify different pattern and state various pattern allowances
	2ND	3.4 Classify different pattern and state various pattern allowances

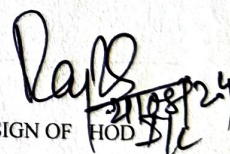
	3 RD	3.5 Classify core. Describe construction and working of cupola and crucible furnace
	4 TH	3.7 Explain die casting method. 3.8 Explain centrifugal casting such as true centrifugal casting and advantages, limitation and area of application.
9 TH	1 ST	3.9 Explain various casting defects with their causes and remedies.
	2 ND	4.0 Powder Metallurgy
	3 RD	4.1 Define powder metallurgy process. 4.2 State advantages of powder metallurgy technology technique
	4 TH	4.3 Describe the methods of producing components by powder metallurgy technique. 4.4 Explain sintering 4.5 Economics of powder metallurgy
10 TH	1 ST	REVISION
	2 ND	5.0 Press Work 5.1 Describe Press Works: blanking, piercing and trimming.
	3 RD	5.2 List various types of die and punch
	4 TH	5.3 Explain simple, Compound & Progressive dies
11 TH	1 ST	5.4 Describe the various advantages & disadvantages of above dies
	2 ND	6.0 Jigs and fixtures 6.1 Define jigs and fixtures
	3 RD	6.2 State advantages of using jigs and fixtures
	4 TH	6.3 State the principle of locations
12 TH	1 ST	6.4 Describe the methods of location with respect to 3-2-1 point location of rectangular jig
	2 ND	6.4 Describe the methods of location with respect to 3-2-1 point location of rectangular jig
	3 RD	6.5 List various types of jig and fixtures.
	4 TH	REVISION

LEARNING RESOURCES:

PRODUCTION TECHNOLOGY, VOL-I & VOL II. O. P KHANNA, DHANPAT RAI PUBLICATIONS
WORKSHOP TECHNOLOGY, VOL - I & II, B.S RAGHUWANSHI, DHANPAT RAI PUBLICATIONS
MANUFACTURING TECHNOLOGY, VOL - I & II, P. N RAO - TMH
MANUFACTURING TECHNOLOGY, VOL - I, P.C SHARMA, S. CHAND


 SIGN OF CONCERNED FACULTY

ACADEMIC COORDINATOR


 SIGN OF HOD

SIGN OF PRINCIPAL