



GOVERNMENT POLYTECHNIC, NABARANGPUR
DEPARTMENT OF MECHANICAL ENGINEERING

Discipline: MECHANICAL ENGG	Semester: 3rd	Name of the Teaching Faculty: DEEPAK RANJAN PATTNAIK
Subject: PRODUCTION TECHNOLOGY	No. of days/per week class allotted: 4	Semester From date: 01.08.2023 To Date: No. of Weeks: 15
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
1 ST	1 ST	METAL FORMING PROCESS 1.1 EXTRUSION : DEFINITION AND CLASSIFICATION
	2 ND	1.2 EXPLAIN DIRECT , INDIRECT AND IMPACT EXTRUSION PROCESS
	3 RD	1.3 DEFINE ROLLING .CLASSIFY IT . 1.4 DIFFERENTIATE BETWEEN COLD ROLLING AND HOT ROLLING PROCESS
	4 TH	1.5 LIST THE DIFFERENT TYPES OF ROLLING MILLS USED IN ROLLING PROCESS . (CONTD...)
2 ND	1 ST	1.5 LIST THE DIFFERENT TYPES OF ROLLING MILLS USED IN ROLLING PROCESS .
	2 ND	2.0 WELDING 2.1 DEFINE WELDING AND CLASSIFY VARIOUS WELDING PROCESSES .
	3 RD	2.1 DEFINE WELDING AND CLASSIFY VARIOUS WELDING PROCESSES . 2.2 EXPLAIN FLUXES USED IN WELDING .
	4 TH	2.3 EXPLAIN OXY - ACETYLENE WELDING PROCESS. (CONTD...) 2.4 EXPLAIN VARIOUS TYPES OF FLAMES USED IN OXY-ACETYLENE WELDING PROCESS.
3 RD	1 ST	2.5 EXPLAIN ARC WELDING PROCESS.(CONTD...)
	2 ND	2.5 EXPLAIN ARC WELDING PROCESS
	3 RD	2.6 SPECIFY ARC WELDING ELECTRODES . 2.7 DEFINE RESISTANCE WELDING AND CLASSIFY IT.(CONTD...)
	4 TH	QUIZ & ASSIGNMENT - I
4 TH	1 ST	2.7 DEFINE RESISTANCE WELDING AND CLASSIFY IT
	2 ND	2.8 DESCRIBE VARIOUS RESISTANCE WELDING PROCESSES SUCH AS BUTT WELDING , SPOT WELDING , FLASH WELDING , PROJECTION WELDING (CONTD...)
	3 RD	2.8 DESCRIBE VARIOUS RESISTANCE WELDING PROCESSES SUCH AS BUTT WELDING , SPOT WELDING , FLASH WELDING , PROJECTION WELDING
	4 TH	2.9 EXPLAIN TIG AND MIG WELDING PROCESS(CONTD...)
5 TH	1 ST	QUIZ & ASSIGNMENT - II
	2 ND	2.9 EXPLAIN TIG AND MIG WELDING PROCESS
	3 RD	2.10 STATE DIFFERENT WELDING DEFECTS WITH CAUSES AND

		REMEDIES(CONTD...)
	4 TH	2.10 STATE DIFFERENT WELDING DEFECTS WITH CAUSES AND REMEDIES
6 TH	1 ST	30 CASTING 3.1 DEFINE CASTING AND CLASSIFY THE VARIOUS CASTING PROCESSES .
	2 ND	3.2 EXPLAIN THE PROCEDURE OF SAND MOULD CASTING
	3 RD	3.3 EXPLAIN DIFFERENT TYPES OF MOULDING SANDS WITH THEIR COMPOSITION AND PROPERTIES(CONTD...)
	4 TH	3.4 CLASSIFY DIFFERENT PATTERNS AND STATE VARIOUS PATTERN ALLOWANCES
7 TH	1 ST	3.5 CLASSIFY CORE .
	2 ND	3.6 DESCRIBE CONSTRUCTION AND WORKING OF CUPOLA AND CRUCIBLE FURNACES .(CONTD...)
	3 RD	QUIZ & ASSIGNMENT - II
	4 TH	3.6 DESCRIBE CONSTRUCTION AND WORKING OF CUPOLA AND CRUCIBLE FURNACES .
8 TH	1 ST	3.7 EXPLAIN DIE CASTING METHOD
	2 ND	3.8 EXPLAIN CENTRIFUGAL CASTING SUCH AS TRUE CENTRIFUGAL CASTING.CENTRIFUGING WITH ADVANTAGES .LIMITATIONS AND AREA OF APPLICATIONS(CONTD...)
	3 RD	3.8 EXPLAIN CENTRIFUGAL CASTING SUCH AS TRUE CENTRIFUGAL CASTING.CENTRIFUGING WITH ADVANTAGES .LIMITATIONS AND AREA OF APPLICATIONS
	4 TH	3.9 EXPLAIN VARIOUS CASTING DEFECTS WITH THEIR CAUSES AND REMEDIES(CONTD...)
9 TH	1 ST	3.9 EXPLAIN VARIOUS CASTING DEFECTS WITH THEIR CAUSES AND REMEDIES
	2 ND	4.0 POWDER METALLURGY 4.1 DEFINE POWDER METALLURGY PROCESS
	3 RD	QUIZ & ASSIGNMENT - III
	4 TH	4.2 STATE ADVANTAGES OF POWDER METALLURGY TECHNOLOGY TECHNIQUE
10 TH	1 ST	4.3 DESCRIBE THE METHODS OF PRODUCING COMPONENTS BY POWDER METALLURGY TECHNIQUE(CONTD...)
	2 ND	4.3 DESCRIBE THE METHODS OF PRODUCING COMPONENTS BY POWDER METALLURGY TECHNIQUE
	3 RD	4.4 EXPLAIN SINTERING(CONTD...)
	4 TH	4.4 EXPLAIN SINTERING
11 TH	1 ST	4.5 ECONOMICS OF POWDER METALLURGY
	2 ND	QUIZ & ASSIGNMENT - IV
	3 RD	5.0 PRESS WORK 5.1 DESCRIBE PRESS WORKS : BLANKING , PIERCING , TRIMMING .(CONTD...)
	4 TH	5.1 DESCRIBE PRESS WORKS : BLANKING , PIERCING , TRIMMING .
12 TH	1 ST	QUIZ & ASSIGNMENT - IV
	2 ND	5.2 LIST VARIOUS TYPES OF DIES AND PUNCH .(CONTD...)
	3 RD	5.2 LIST VARIOUS TYPES OF DIES AND PUNCH
	4 TH	5.3 EXPLAIN SIMPLE , COMPOUND AND PROGRESSIVE DIES(CONTD...)
13 TH	1 ST	5.3 EXPLAIN SIMPLE , COMPOUND AND PROGRESSIVE DIES .
	2 ND	5.4 DESCRIBE THE VARIOUS ADVANTAGES AND DISADVANTAGES OF ABOVE DIES(CONTD...)
	3 RD	5.4 DESCRIBE THE VARIOUS ADVANTAGES AND DISADVANTAGES OF ABOVE DIES
	4 TH	6.0 JIGS AND FIXTURES 6.1 DEFINE JIGS AND FIXTURES

14 TH	1 ST	6.2 STATE ADVANTAGES OF USING JIGS AND FIXTURES
	2 ND	6.3 STATE THE PRINCIPLE OF LOCATIONS
	3 RD	6.4 DESCRIBE THE METHODS OF LOCATION WITH RESPECT TO 3-2-1 POINT LOCATION OF RECTANGULAR JIG
	4 TH	6.5 LIST VARIOUS TYPES OF JIGS AND FIXTURES
15 TH	1 ST	QUIZ & ASSIGNMENT - V
	2 ND	REVISION
	3 RD	REVISION
	4 TH	DISCUSSION OF MOST PROBABLE QUESTIONS FOR END SEM EXAMINATIONS

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

Deepak Ranjan Pattnaik,
 1.08.2023
 Sign. Of Faculty
 concerned

Academic
 co-ordinator
 31/7/23

Sign. Of HOD
 31/7/23

Principal
 31/7/23