

Government Polytechnic, Sonepur  
Session: 2023-24

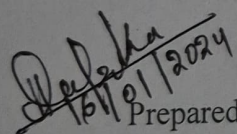
Discipline: <b>Metallurgical Engineering</b>	Semester: <b>6<sup>th</sup></b>	Name of the Teaching Faculty: <b>Deepika Naik</b>	
Subject: <b>Industrial Metallurgy (TH-03)</b>	No. of days/per week class allotted: <b>5</b>	Semester from Date: <b>16. 01. 2024</b> to Date: <b>26.04.2024</b> No. of weeks: <b>15</b>	
Week	Class No.		Lecture Topics
1	1	Chapter -1: Classification of Welding process	Introduction welding process
	2		Classification of different welding process
	3		-do-
	4		Pressure welding process
	5		Non- pressure welding process
2	6	Chapter-2: Gas welding	Different types of flame in gas welding
	7		Gas welding equipment's
	8		-do-
	9		Advantages and Disadvantages of gas welding
	10		Application of gas welding
3	11	Chapter-3: Arc welding	Metallic arc welding process
	12		Submerged arc welding process
	13		-do-
	14		TIG welding process
	15		MIG welding process
4	16	Chapter-4: Thermit Welding	Principle of thermit welding
	17		Advantages of Thermit welding and Disadvantages of thermit welding
	18	Chapter-5: Resistance Welding	Principle of resistance welding
	19		Type of resistance welding
	20		-do-
5	21	Chapter-6: Welding of steel C.I and Cu. alloys	Precaution required for welding of steel
	22		Joint design and techniques required for C.I welding
	23		Describe the welding of copper and its alloys
	24	Chapter-7: Metallurgy of welding	Temperature distribution in welding of steel
	25		-do-
6	26		Structural changes in weld metal
	27		-do-



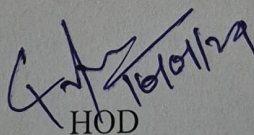
	28		Weldability
	29		Welding defects
	30		Methods for testing welding joint
7	31	Chapter-8:Brazing and soldering	Principle of Brazing and procedure
	32		Various Brazing method
	33		-do-
	34		Soldering steps
	35		Various types of solders
8	36	Chapter-9:Scope of Powder Metallurgy	Introduction of Powder Metallurgy
	37		Define the Historical development of Powder Metallurgy
	38		Advantages and Disadvantages of P/M
	39		Application of P/M
	40		Primary and secondary characteristics of P/M
9	41	Chapter- 10:Method of Powder Production	Different methods of powder production
	42		-do-
	43		Method for mechanical, physical ,chemical and electro chemical process
	44		-do-
	45		-do-
10	46	Chapter-11:Compaction of metal Powders	Significance and different methods of conditioning
	47		-do-
	48		Die- compaction techniques
	49		
	50		Isostatic processing M/P
11	51	Chapter-12: Sintering of metal powder	Advantages limitation application
	52		-do-
	53		Outline on continuous compaction
	54		Introduction Sintering
	55		Explain its various stages
12	56		-do-
	57		Describe mechanism of sintering process
	58		-do-
	59		Process variables and furnaces used for sintering
			-do-



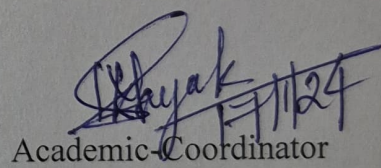
	60		Liquid phase sintering
13	61	Chapter-13:Flow sheets of production	Describe the production of flow sheets
	62		Porous bearing and Sintered friction material
	63		Sintered carbides
	64		-do-
	65		Magnetic materials & Cermets
14	66		-do-
	67		Dispersion Strengthened materials
	68		-do-
	69		Revision class-1
	70		Revision class-2
15	71		Class test-1
	72		Class test-2
	73		Class test-3
	74		Important Question Discussion
	75		Important Question Discussion

  
16/11/2024

Prepared By  
(D. Naik, Lect. Metallurgy)

  
16/11/24

HOD  
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16/11/24

Academic Coordinator