PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH

LESSON PLAN

Session-2022-2023

Discipline: Metallurgical Engg. Semester: 6th

Name of the Teaching Faculty: Amit Kumar Kar

Subject: Industrial Metallurgy No. of Days/per week class allotted 05

Semester From Date : 14/02/2023 To Date : 23/05/2023 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
01	1	Classification of different welding processes
	2	Classification of different welding processes
	3	Pressure welding processes
	4	Non pressure welding processes
	5	Idea about different types of flames in gas welding
02	1	Gas welding equipments
	2	Advantages of gas welding
	3	Disadvantages of gas welding
	4	Application of gas welding
	5	Various Arc welding processes
03	1	Metallic Arc welding process
	2	Submerged Arc welding process

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Week	Class Day	Theory /Practical Topics
	3	TIG welding process
	4	MIG welding process
	5	Thermit welding process
04	1	Thermit welding principle
	2	Advantages of thermit welding
	3	Disadvantages of thermit welding
	4	Resistance welding principles
	5	Resistance welding procedures
05	1	Various types of Resistance welding
	2	Various types of Resistance welding
	3	Precaution required for welding of steel
	4	Precaution required for C.I welding

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Week	Class Day	Theory /Practical Topics
	5	Describe the welding of Cu and its alloys
06	1	Joint design and techniques for C-I welding
	2	Revision and doubt clearing
	3	Metallurgy of Welding (temp. distribution)
	4	Structural changes in weld metal and
	5	parent metal after welding
07	1	Weldability (diff. aspect)
	2	Welding defects
	3	Different methods fore testing welding joints
	4	Brazing principles and procedures
	5	Brazing methods of common ferrous and
08	1	non ferrous metals

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Week	Class Day	Theory /Practical Topics
	2	Soldering and types of solders
	3	Methods of soldering common metals
	4	Powder metallurgy (P/M)
	5	Historical development of P/M
09	1	Advantages, disadvantages, appl" of P/M
	2	Primary and Secondary features of Powder
	3	Different methods of powder production
	4	Different methods of powder production
	5	Mechanical methods of powder production
10	1	physical methods of powder production
	2	chemical methods of powder production
	3	Electro chemical methods of powder production

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Week	Class Day	Theory /Practical Topics
	4	Q/A Discussion and doubt clearing
	5	Significance of compaction of metal powders
11	1	Different methods of conditioning
	2	Different die-compaction techniques
	3	Isostating pressing with advantages
	4	Disadvantages of Isostatic pressing
	5	continuous compaction (brief outline)
12	1	Sintering of metal powders
	2	Various stages of sintering
	3	Mechanism of sintering processes
	4	Mechanism of sintering processes
	5	Process variables and furnaces used

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Week	Class Day	Theory /Practical Topics
13	1	for sintering
	2	Give a note on liquid phase sintering
	3	Q/A discussion and doubt clearing
	4	Flow sheets of production (introduction)
	5	Porous bearing
14	1	Sintered friction materials
	2	Sintered Carbides
	3	Magnetic materials
	4	Cermets
	5	Dispersion strengthened materials
15	1	Sample Q/A discussion
	2	Assignments and assessments.

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