

GOVT. POLYTECHNIC MAYURBHANJ
LESSON PLAN FOR INDUSTRIAL METALLURGY
SUMMER – 2023-2024

Program: Metallurgy ENGG.		Semester: 6th Sem		Name of the Teaching Faculty: SUSHREE SUBHASHREE DAS	
Course: INDUSTRIAL METALLURGY (IM) Course code- TH3		No. of Days / per week class allotted: 05		Semester From date: 16.01.2024 To Date: 26.04.2024	
MONTH	Week	Day	Unit	Topics	
JANUARY	3rd	1st	UNIT-1	Classification of Welding Processes	
		2nd		Classify different welding processes such as pressure welding processes and non pressure welding process	
		3rd	UNIT-2	Gas Welding	
	4th	4th		Explain different flames, equipment, steps of gas welding	
		1st	UNIT-3	Advantages, Disadvantages and Application of gas welding	
		2nd		Arc Welding	
		3rd		Describe various arc welding processes such as Metallic Arc	
		4th		Submerged Arc	
		5th		TIG Welding	
	5th	1st		MIG Welding	
FEBRUARY	1st	2nd	UNIT-4	Thermit Welding	
		3rd		Discuss the principle of Thermit welding	
		4th		Procedure of Thermit welding	
	2nd	5th		Advantages and Disadvantages of Thermit welding	
		1st		SURPRISE TEST	
		2nd		Discussion of Previous Units	
		3rd		Discussion of Previous Units	
	3rd	4th	UNIT-5	Resistance Welding	
		5th		Explain the principle of resistance welding	
		1st	UNIT-6	Various types of resistance welding	
		2nd		Welding of Steel, C.I. and Cu Alloys	
		3rd		Mention the precaution required for welding of steel	
		4th		Explain the joint design required for C.I. welding	
	4th	5th		Explain the techniques required for C.I. welding	
		1st		Describe the welding of copper and its alloys	
		2nd		Discuss previous year Questions	
		3rd		Quiz test	
		4th	UNIT-7	Metallurgy of Welding	
	5th	5th		Explain the temperature distribution in welding of steel	
		1st		Discuss the structural changes in weld metal and parent metal after welding	
		2nd		CLASS TEST-I	
		3rd		CLASS TEST-I	
	5th	4th		Discuss various methods for testing welding joints	
		5th		Discuss various methods for testing welding joints	
	2nd	1st	UNIT-8	Brazing and Soldering	
		2nd		PANCHAYATI RAJ DIWAS	
		3rd		Discuss various brazing methods of common ferrous metals	
		4th		Discuss various brazing methods of nonferrous metals	
		5th		Define brazing and explain its principle and procedure.	
	5th	5th		MAHA SHIVRATRI	

MARCH	3rd	2nd		Discuss various brazing methods of nonferrous metals
		3rd		Define soldering and explain various types of solders
		4th		Describe the basic steps of soldering of common metals
		5th		
	4th	1st	UNIT-9	POWDER METALLURGY
		2nd		Scope of Powder Metallurgy
		3rd		Define powder metallurgy
		4th		INTERNAL ASSESSMENT
		5th		INTERNAL ASSESSMENT
	5th	1st	UNIT-10	DOLA PURNIMA
		2nd		HOLI
		3rd		Discuss various methods for testing welding joints
		4th		Methods of Powder Production
		5th		Name different methods of powder production
APRIL	1ST	1ST	UNIT-11	UTKAL DIWAS
		2nd		Describe the chemical and electro chemical methods
		3rd		Compaction of Metal Powders
		4th		Discuss various methods for testing welding joints
		5th		Discuss various methods for testing welding joints
	2nd	1st	UNIT-12	Explain different die-compaction techniques
		2nd		Describe isostatic pressing with advantages, limitation applications
		3rd		Give brief outline on continuous compaction
		4th		Id-Ul-Fitr
		5th		Define sintering and explain its various stages
	3rd	1st	UNIT-13	Explain briefly the mechanism of sintering process
		2nd		Explain the process variables and furnaces used for sintering
		3rd		Give a note on liquid phase sintering
		4th		Flow Sheets of Production
		5th		Give Flow Sheets for the Production of a. porous bearing
	4th	1st		Give Flow Sheets for the Production of a. porous bearing
		2nd		b. Sintered friction materials c. Sintered carbides d. Magnetic Materials
		3rd		e. Cermet f. Dispersion strengthened materials
		4th		CLASS TEST-2
		5th		CLASS TEST-2