

GOVT. POLYTECHNIC MAYURBHANJ

LESSON PLAN OF INDUSTRIAL METALLURGY ACADEMIC YEAR (2025-26) SUMMER

Discipline: Metallurgy Engineering	Semester: 4th semester	Name of the Teaching Faculty: SUSHREE SUBHASHREE DAS
Subject: INDUSTRIAL METALLURGY Sub code: MTPC206	No of days /week class allotted: 03	Semester from Date: 22/12/2025 to 18/04/2026

Month	Week	Day	Unit	Topics	
December	4 th	1 ST	UNIT-1	Welding Processes: Gas Welding: types of flames, equipment's, steps, advantages, disadvantages and application of gas welding	
		3 RD			
		5 th			
	5 th	1 ST		Arc Welding :various arc welding process such as -Gas Metal Arc Welding (GMAW) Gas Tungsten Arc Welding (GTAW) ,Shielded Metal Arc Welding (SMAW),	
		3 RD		Submerged Arc Welding (SAW) , Thermit Welding : principle, procedure, advantages and disadvantages of Thermit welding,	
January	1 st	5 th	UNIT-1	Friction Stir Welding, Ultrasonic Welding, Additive Manufacturing with Metal Joining	
		2 nd		Advanced Robotics and Automation in Metal Joining	
	2 nd	1 ST		REVISION	
		3 RD			
		5 TH		Affected Zone (HAZ) and its Effects, Weld Defects: Types of defects: Porosity, cracking, incomplete fusion, undercut	
	3 rd	1 ST		DOUBT CLEARING CLASS	
		3 RD		MAKAR SANKRANTI	
		5 TH		UNIT-2	Joining of Dissimilar Metals & Metallurgical Aspects of Metal Joining: Brazing and Soldering: Brazing- principle and various brazing methods of common ferrous and nonferrous metals
	4 th	1 ST			Soldering and various types of solders, basic steps of soldering of common metals
		3 RD			DOUBT CLEARING CLASS
		5 TH			SUBASH CHANDRA BOSH JAYANTI/ BASANTA PANCHAMI
	5 th	1 ST			REPUBLIC DAY
		3 RD		REVISION	
5 TH		1st Monthly Test			
February		2 nd	1 ST	UNIT-3	Powder Metallurgy: Introduction to powder metallurgy advantages, disadvantages and applications of Powder Metallurgy
	3 RD				
	5 TH		REVISION		
	3 rd	1 ST	primary and secondary characteristics of powders		
		3 RD	different methods of powder production, different die-compaction techniques , continuous compaction		
5 TH		STUDY VISIT			

	4 th	1 ST	UNIT-4	DOUBT CLEARING CLASS
		3 RD		Corrosion: Introduction to corrosion, electrochemical corrosion and chemical corrosion
		5 TH		1ST INTERNAL ASSESSMENT
	5 th	1 ST		corrosion rate, Faraday's law of electrolysis and its deviation
		3 RD		REVISION
		5 TH		DOUBT CLEARING CLASS
March	2 nd	1 ST	UNIT-4	GROUP DISCUSSION
		3 RD		HOLI
		5 TH		EMF series & Galvanic Series, types of corrosion (Atmospheric Corrosion)
	3 rd	1 ST		2ND MENTORING SESSION
		3 RD		Doubt clearing Class
		5 TH		EMF series & Galvanic Series, types of corrosion(Stress corrosion cracking, corrosion fatigue)
	4 th	1 ST		REVISION
		3 RD		EMF series & Galvanic Series, types of corrosion(Stress corrosion cracking, corrosion fatigue)
		5 TH		REVISION
	5 th	1 ST		Corrosion Prevention Methods: cathodic Protection
		3 RD		SECOND INTERNAL ASSESSMENT
		5 TH		SHREE RAM NAVAMI
6 th	1 ST	Corrosion Prevention Methods: Anodic protection, Coatings & Inhibitors		
		UTKAL DIVAS		
		REVISION		
April	1 st	3 RD	UNIT-4	GROUP DISCUSSION
		5 TH		REVISION
				PRE-SEMESTER
	2 nd	1 ST		GROUP DISCUSSION
		3 RD		REVISION
		5 TH		PRE-SEMESTER
	3 rd	1 ST		GROUP DISCUSSION
		3 RD		MOCK TEST
		5 TH		2nd Monthly Test

Subject Expert
Metallurgy Engg.

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Academic Co-ordinator
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