GOVT. POLYTECHNIC MAYURBHANJ

LESSON PLAN OF NON FERROUS EXTRACTIVE METALLURGY ACADEMIC YEAR (2025-26) SUMMER

Discipline: **Metallurgy Engineering**	Semester: **4th semester**	Name of the Teaching Faculty: **SUBRAT KUMAR BEHERA**
Subject: **NON FERROUS EXTRACTIVE METALLURGY** Sub code: **MTPE204**	No of days /week class allotted:**03**	Semester from Date:**22/12/2025 to 18/04/2026**

Month	Week	Day	Unit	Topics
December	4th	2nd	UNIT-1	Introduction: Ores and minerals, gangue, flux and slag,matte and speiss Non-ferrous ore reserves in India & non ferrous industries in India.
		5th		**X-MASS DAY**
		7th		**4th SATURDAY HOLIDAY**
	5th	2nd		Pyrometallurgical processes: roasting and different roasting methods, smelting and different smelting practices Flash smelting, hearth smelting, matte smelting
January	1st	5th	UNIT-1	Explain the method of distillation and sublimation, Explain the process of converting of matte and pig iron
		7th		Hydrometallurgical process: stages of hydrometallurgical process, flow diagram for hydrometallurgical extraction, leaching and different leaching methods (bacterial leaching and pressure leaching)
	2nd	2nd		Electrometallurgical process: electrolysis, electro wining, electro refining
		5th		**REVISION**
		7th	UNIT-2	**2nd SATURDAY HOLIDAY**
	3rd	2nd		Pyrometallurgical Extraction of Copper: roasting of copper ore, matte smelting of copper ore. conversion of copper matte, refining of copper, uses of copper.
		5th		Pyrometallurgical and Hydrometallurgical Method of Extraction of Zinc
		7th		roasting of zinc ore concentrates
	4th	2nd		extraction by vertical retort process, refining of zinc
		5th		Leaching and preparation zinc base solution, electrolysis of zinc solution
		7th		**4th SATURDAY HOLIDAY**
	5th	2nd		uses of zinc
		5th		**1st Monthly Test**
		7th		Pyrometallurgical Method of Nickel Extraction
February	1st	2nd		Roasting of nickel ore
		5th		smelting of nickel concentrate
		7th		Refining of nickel

	2nd	2nd		uses of nickel
		5th		REVISION
		7th		2ND SATURDAY HOLIDAY
	3rd	2nd	UNIT-3	Extraction of Metals from Oxide ores Extraction of aluminum: Bayer's process of alumina production
		5th		1st Internal Assessment
		7th		fused salt electrolysis of alumina by Hall Heroult process, refining of aluminum, anode effect, uses of aluminum, Extraction of Metals from Halides
	4th	2nd		Extraction of Titanium: extraction of titanium, treatments given to titanium ore, chlorination
		5th		reduction for titanium extraction, refining of titanium (distillation, uses of titanium)
		7th		4TH SATURDAY HOLIDAY
March	1st	2nd		DOLA PURNIMA
		5th		Extraction of Precious Metals
		7th		Extraction of gold: cyanidation for gold extraction, uses of gold.
	2nd	2nd		Doubt clearing Class
		5th		Extraction of Lithium
		7th		2ND SATURDAY HOLIDAY
	3rd	2nd		electrolysis for Li extraction
		5th		properties of Li and uses of Li
		7th	UNIT-4	ID-UL-FITRE
	4th	2nd		Production of Secondary Metals.
		5th		2nd Internal Assessment
		7th		4TH SATURDAY HOLIDAY
	5th	2nd		Process for production of copper, lead, zinc &. aluminum metals from scraps.
April	1st	5th		Process for production of copper, lead, zinc &. aluminum metals from scraps.
		7th		GOOD FRIDAY
	2nd	2nd		Process for production of copper, lead, zinc &. aluminum metals from scraps.
		5th		REVISION
		7th		2ND SATURDAY HOLIDAY
	3rd	2nd		MAHABISHUBA SANKRANTI
		5th		2nd Monthly Test
		7th		MOCK TEST

26.12.25.
Subject Expert
Metallurgy Engg.

26/12/2025
HOD
METALLURGY ENGINEERING
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