

LESSON PLAN-5th SEMESTER ( 2019 )				
SUBJECT:NON-FERROUS EXTRACTIVE METALLURGY				
NAME OF THE FACULTY: CHINMAY MOHAPATRA				
MONTH	MODULE/UNIT	COURSE TO BE COVERED	CLASSES REQUIRED	REMARKS
July	1	<b>Non-ferrous ore Reserves and Non-ferrous Metal Industries in India</b>	<b>3</b>	
	2	<b>Extraction of Metals from Oxide Ores</b>	<b>15</b>	
		Describe the Bayer's process of alumina production.	3	
		Explain the fused salt electrolysis of alumina by Hall Heroult process.	3	
		Discuss anode effect. Explain the method of refining of aluminum State the uses of aluminum.	3	
		Explain the process of tin ore concentration. Explain the process of concentrate smelting for tin extraction.	3	
		Describe the process of refining of tin. State the uses of tin.	3	
August	3	<b>Extraction of Metals from Sulphide Ores</b>	<b>18</b>	
		Describe the process of roasting of copper ore. Describe the process of matte smelting of copper ore.	3	
		Explain the process of converting of copper matte. Explain the refining of copper. State the uses of copper.	2	
		Explain roasting and sintering of lead ore. Explain the process of extraction of lead by blast furnace smelter.	3	
		Describe in detail the process of refining of base bullion. State the uses of lead.	2	
		Describe the roasting of zinc ore concentrate. Explain how zinc is extracted by vertical retort process. Explain the refining of zinc.	3	
		Explain the process of leaching and preparation zinc base solution Describe the electrolysis of zinc solution State the uses of zinc	2	
		Explain the roasting of nickel ore. Explain the method of smelting of nickel concentrate.	1	
		Explain the method of refining of nickel State the uses of nickel.	2	



September	4	<b>Extraction of Metals from Halides</b>	10	
		Describe extraction of titanium Explain the type of treatment given to titanium ore.	4	
		Explain the process of chlorination and mag. reduction for titanium extraction. Explain the process of refining of titanium (distillation) State the uses of titanium	6	
	5	<b>Extraction of Precious Metals</b>	6	
		Explain extraction of gold.	2	
		Explain the process of cyanidation for gold extraction	3	
		State the uses of gold.	1	
October	6	<b>Production of Secondary Metals</b>	8	
		Explain the process of production of copper, lead	4	
		Zinc & aluminum metals from scraps.	4	