

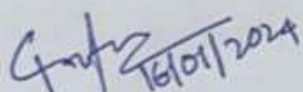
Government Polytechnic, Sonapur

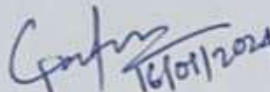
Session: 2023-24

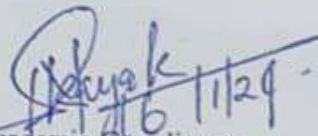
Lesson Plan

Discipline: <b>Metallurgical Engineering</b>	Semester: <b>6<sup>th</sup></b>	Name of the Teaching Faculty: <b>Goutam Kumar Majhi</b>		
Subject: <b>Corrosion Engineering (TH-04)</b>	No. of days/per week class allotted: <b>4</b>	Semester from Date: <b>16. 01. 2024</b> to Date: <b>26.04.2024</b> No. of weeks: <b>14</b>		
<b>Week</b>	<b>Class No.</b>		<b>Lecture Topics</b>	
1	1	Chapter -1: Introduction to Corrosion	Introduction	
	2		Cost of corrosion	
	3		Direct loss and indirect loss	
	4		importance of corrosion studies	
2	5		Classification of types of corrosion	
	6		electrochemical corrosion and chemical corrosion	
	7		-do-	
	8		Corrosion rate	
3	9	Chapter -2: Corrosion principles	electrochemical principle of corrosion	
	10		-do-	
	11		Faraday's 1 <sup>st</sup> law	
	12		-do-	
4	13		Faraday's 2nd law	
	14		-do-	
	15		Deviation from Faradays law	
	16		-do-	
5	17	Chapter-3: Types of electrochemical cells	Galvanic cell	
	18		-do-	
	19		Concentration Cell	
	20		Electrolytic cell	
6	21		Difference between various types of electrochemical cell	
	22		-do-	
	23		Chapter-4: Electrode potential	Electrode potential
	24			Construction of EMF series
		-do-		
7	25	Application and drawbacks of EMF series		
	26	Galvanic series		
	27	Comparison between EMF and Galvanic series		
	28	Tutorial class for Ch1,2,3 &4		

8	29	Chapter-5: Different forms of corrosion	Broad Classification of forms of corrosion			
	30		Atmospheric corrosion			
	31		Intergranular corrosion			
	32		Sensitization in SS			
9	33		Chapter-5: Different forms of corrosion	Knife line attack		
	34			Pitting corrosion		
	35			Corrosion fatigue		
	36			Galvanic corrosion		
10	37			Chapter-5: Different forms of corrosion	-do-	
	38				Stress corrosion cracking	
	39				-do-	
	40				Cavitation corrosion	
11	41				Chapter-5: Different forms of corrosion	Fretting corrosion
	42					High temperature oxidation corrosion
	43					Stray current corrosion
	44	Chapter-6: Corrosion Prevention				Methods for prevention of corrosion
12	45					-do-
	46					Importance of proper selection of materials
	47					Role of electrode potential in prevention
	48		Cathodic Protection			
13	49		Chapter-6: Corrosion Prevention			Anodic Protection
	50					Characteristic of protective coating
	51					-do-
	52			Metallic coating		
14	53			Chapter-6: Corrosion Prevention		Non-metallic Coatings
	54					Advantages and methods of coatings
	55					Inhibitors
	56				Types of inhibitors	
15	57				Chapter-6: Corrosion Prevention	Tutorial for Ch5 & 6
	58					Revision Class
	59	Revision Class				
	60	Important question discussion				

  
 Prepared By  
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