

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN Session-2023-2024

Discipline: Metallurgical Engg. Semester: 6th


Subject: CE

Name of the Teaching Faculty: Anadi charan Jena

Subject: CE No. of Days/per week class allotted: 04

semester From Date :16-01-2024 To Date :26-04-2024 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
1st	1st <u>Topic-1</u>	Introduction to corrosion
	2nd	Definition of corrosion with examples
	3rd	Cost of corrosion
	4th	Direct and indirect losses
2nd	1st	Losses incurred by corrosion
	2nd	Importance of corrosion
	3rd	Corrosion classification
	4th	Dry and wet corrosion
3rd	1st	Rate of corrosion, Determination
	2nd	Electrochemical and chemical corrosion
	3rd <u>Topic 2</u>	Principles of corrosion
	4th	Electrochemical principles of corrosion.


Signature of the Faculty

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Semester From Date : 16-01-2024 To Date : 26-04-2024 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
4th	1st	Electrochemical aspects of corrosion
	2nd	Polarisation and Passivity
	3rd	Environmental aspects and effects
	4th	Faraday's laws of Electrolysis
5th	1st	Applications of Faraday's laws
	2nd	Causes of deviations
	3rd	Types of electrochemical cells
	4th	Galvanic cells
6th	1st	Galvanic cell
	2nd	concentration cell
	3rd	concentration cell
	4th	Electrolytic cell


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Week	Class Day	Theory / Practical Topics
7th	1st <u>Topic-4</u>	Electrode potential
	2nd	Measurement of electrode potential
	3rd	Standard electrode potential
	4th	EMF Series, importance
8th	1st	Galvanic Series, importance
	2nd	Applications of Galvanic and emf series.
	3rd <u>Topic-5</u>	Different forms of corrosion
	4th	Atmospheric corrosion, factors affecting.
9th	1st	Intergranular corrosion, prevention.
	2nd	Factors affecting it
	3rd	Principles of pitting corrosion
	4th	Factors affecting, prevention.



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Week	Class Day	Theory /Practical Topics
10 th	1st	Corrosion Fatigue, principles
	2nd	Factors affecting it and prevention.
	3rd	Principles of galvanic corrosion
	4th	Factors affecting galvanic corrosion, prevention.
11 th	1st	Stress Corrosion Cracking, Mechanism
	2nd	Factors affecting SCC, prevention
	3rd	Cavitation Corrosion, prevention
	4th	Fretting Corrosion, prevention
12 th	1st	Oxidation, Stray Current Corrosion
	2nd	Corrosion Prevention
	3rd	Study of Physical, Mechanical properties Protective Coatings
	4th	Metallic and Non metallic coatings

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Week	Class Day	Theory /Practical Topics
3 th	1st	Advantages of metallic coatings
	2nd	Mechanical properties of protective coatings
	3rd	Control of environmental factors
	4th	Alteration of environments
14 th	1st	Introduction to inhibitors
	2nd	Types of inhibitors
	3rd	Cathodic and anodic inhibitors
	4th	Applications of inhibitors
15 th	1st	Principles of cathodic protection
	2nd	Applications of cathodic protection
	3rd	Anodic protection, principles
	4th	Comparison between cathodic and anodic protection.



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