PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH

LESSON PLAN

Session-2022-2023

Discipline: Metallurgical Engg. Semester: 6th

Name of the Teaching Faculty: Anadi Charan Jena

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

Semester From Date : 14.02.23 To Date : 23.5.2023 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
1st Topic-1	1st	Introduction to corrosion
	2nd	Definitions of corrosion with examples
	3rd	cost of corrosion
	4th	Direct and Indirect corrosion
2nd	1st	Losses incurred by corrosion
	2nd	Importance of corrosion study
	3rd	Classification of corrosion
	4th	Principles, Dry and wet corrosion
3rd	1st	corrosion rate measurement
	2nd	Chemical and electro-chemical corrosion
Topic-2	3rd	Corrosion principles
	4th	Electro chemical aspects of corrosion

Signature of the Faculty

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

Semester From Date : 14.2.23 To Date : 23.5.23 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
4th	1st	Electro-chemical aspects of Corrosion
	2nd	Polarisation and passivity
	3rd	Environmental effects
	4th	Faraday's laws of electrolysis.
5th	1st	Applications of Faraday's laws
	2nd	Causes of deviations
Topic-3	3rd	Types of electro-chemical cells.
	4th	Galvanic cells
6th	1st	Galvanic cells. (Contd.)
	2nd	concentration cells
	3rd	concentration cells (Contd.)
	4th	Electrolytic cell

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Semester From Date : 14-2-23 To Date : 23-5-23 No. of Weeks : 15

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

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Semester From Date : 14-2-23 To Date : 23-5-23 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
10th	1st	Corrosion Fatigue, principles
	2nd	Factors affecting it, preventions
	3rd	Principles of galvanic corrosion
	4th	Factors affecting galvanic corrosion, prevention
11th	1st	Stress corrosion Cracking, principles
	2nd	Factors affecting stress corrosion cracking and prevention
	3rd	Cavitation corrosion, prevention
	4th	Fretting corrosion, prevention
12th	1st	Oxidation, stray current corrosion preventions.
	2nd	Corrosion prevention
	3rd	Study of physical properties, coatings
	4th	Metallic and Non-metallic coatings

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

Semester From Date : 14-2-23 To Date : 23 5 23 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
13th	1st	Advantages of metallic coatings
	2nd	Mechanical properties of metallic coatings
	3rd	control of environmental factors
	4th	Alteration of environments
14th	1st	Introduction to inhibitors.
	2nd	Types of Inhibitors
	3rd	Cathodic and anodic inhibitors
	4th	Applications of inhibitors to environments.
15th	1st	principles of cathodic protection
	2nd	Applications of cathodic protection
	3rd	Principles of anodic protection
	4th	advantages and comparisons.

Signature of the Faculty