FOUR YEAR UNDERGRADUATE PROGRAM(2024 – 28)
DEPARTMENT OF INDUSTRIAL CHEMISTRY
COURSE CURRICULUM

PART-A: Introduction				
Program:Bachelor in Science *(Certificate / Diploma / Degree/Honors)*			**Semester -I/III/V**	Session: **2024-2025**
1	**Course Code**	**ICVAC-01T**		
2	**Course Title**	**Corrosion in Industry**		
3	**Course Type**	**VAC**		
4	**Pre-requisite** (if,any)	***As per program***		
5	**Course Learning. Outcomes(CLO)**	➢ *To understand the types of corrosion in the industries.* ➢ *To understand the process of corrosion.* ➢ *To learn the adverse effect of corrosion.* ➢ *To learn the method of protection from corrosion.*		
6	**CreditValue**	**2 Credits**	***Credit = 15 Hours -learning & Observation***	
7	**TotalMarks**	**Max.Marks:50**		**Min Passing Marks:20**

PART -B: Content oftheCourse

TotalNo.of Teaching–learning Periods(01 Hr. per period) - 30 Periods (30 Hours)

Unit	Topics(Coursecontents)	No.ofPeriod
I	Corrosion and its control :Introduction, Economic aspects of corrosion, Dry or Chemical Corrosion, Wet or electrochemical corrosion, Mechanism of Electrochemical Corrosion.Galvanic Corrosion, Concentration Cell Corrosion, Differential aeration corrosion, Pitting Corrosion, Underground orsoil corrosion, Passivity.	**08**
II	Factors Influencing Corrosion , Microbiological Corrosion, Atmospheric corrosion. Corrosion Control :Proper designing, Usingpuremetal, Usingmetal alloys. Chemical conversion , Coating , Phosphating, Chromising, Treatment of metal surfaces, hot dipping , Use of inhibitors.	**07**
III	Protective coating: Introduction, Metallic Coatings, Various methods of cleaningarticles before electrode position, Electroplate and Electroplating methods. Pretreatment of the surface, Metallic Coatings, Hot Dipping, Cementation or Impregnated Coatings, SprayedMetalCoatings, Cladding, Vapour Deposition.	**08**
IV	Paints : ingredients and their functions, Required Properties of a Paint, Paint Constituents andTheir Functions, Manufactureof Paint. Types of Pigments, Characteristics of pigment, Uses in Paint Emulsion Paints, Paint Remover Varnishes. ElectricalInsulating Materials: Dielectric properties, Requirements of anElectrical Insulating Material, Classificationof insulating material, Electrical Rigid Insulations.	**08**
Keywords	***Corrosion, electroplating, galvanization, Paints, rusting .***	

SignatureofConvener&Members (CBoS):

PART–C:Learning Resources

Text Books, Reference Books and Others

Text Books Recommended –

1. *Vedprakash. (2012).* Corrosion engineering *(3rd ed.). PHI Learning Private Limited.*
2. *Verma, G. S. (2016).* Metallic corrosion *(2nd ed.). Khanna Publishers.*

Reference Books Recommended –

1. Rose Philo K.J. (1992). Inorganic Materials of Industrial Importance. New Delhi, India: Vishal Publishing Co.

2. Singh, R. K. (2010). Chemistry of Corrosion and Protection of Steel. Boca Raton, FL: CRC Press.

3. Jones, D. A. (1995). Principles and Prevention of Corrosion (2nd ed.). Upper Saddle River, NJ: Prentice Hall.

4. Baboian, R. (Ed.). (2005). Corrosion Tests and Standards: Application and Interpretation (2nd ed.). West Conshohocken, PA: ASTM International

Online Resources:

- **http://nptel.ac.in**
- **http://swayam.gov.in**
- **http://epathshala.nic.in**

PART-D:Assessment andEvaluation

Suggested Continuous Evaluation Methods:
MaximumMarks: 50 Marks
ContinuousInternal Assessment(CIA):15 Marks
EndSemesterExam(ESE):35Marks

Continuous InternalAssessment (CIA): **(By Course Teacher)**	Internal Test / Quiz-(2): **10 &10** Assignment/Seminar +Attendance- **05** Total Marks **-15**	Better marks out of thetwo Test / Quiz+obtained marks in Assignment shall be considered against **15** Marks
End Semester Exam (ESE):	**Two section – A & B** Section **A: Q1.** Objective – **05 x1= 05** Mark; **Q2.** Short answer type- **5x2 =10Marks** Section **B:** Descriptive answer type qts.,**1out of 2** from each unit-**4x05=20Marks**	

Name and Signature of Convener & Members of CBoS: