1.	Title of the course	Corrosion Engineering
2.	Course number	CH4021
3.	Status of the course	Elective
4.	Structure of credits	3-0-0-3
5.	Offered to	UG
6.	New course/modification to	New course
7.	To be offered by	Department of Chemical Engineering
8.	To take effect from	July 2020
9.	Prerequisite	CoT
10.	Whether approved by the Department	Yes
11.	**Course Objective(s):** To introduce the principles of corrosion identification, quantification, characterization and mitigation in industry.	
12.	**Course Content:** Definition of corrosion; Impact on economy; Electrochemical reactions; Forms of corrosion: uniform, galvanic, crevice, pitting, inter-granular, erosion, stress, embrittlement; Corrosion testing: specimen preparation, exposure tests, open corrosion potential, linear polarization, Tafel slopes, corrosion current, electrochemical impedance spectroscopy; Corrosion prevention: cathodic protection, sacrificial anode methods and anti-corrosion coatings; Flow accelerated corrosion; Galvanic corrosion as a moving boundary problem; High temperature corrosion.	
13.	**Textbook(s):** 1. Fontana M G, *Corrosion Engineering*, 3rd Edition, McGraw-Hill Education (2017). 2. Jones D A, *Principles and Prevention of Corrosion*, 2nd Edition, Pearson Education (2001).	
14.	**Reference(s):** 1. Reoberge P, *Handbook of Corrosion Engineering*, 3rd Edition, McGraw-Hill Education (2019). 2. Schweitzer P A, *Corrosion Engineering Handbook: Fundamentals of Metallic Corrosion: Atmospheric and Media Corrosion of Metals*, 1st Edition, CRC Press (2006).	