

1.	Title of the course	Corrosion Engineering
2.	Course number	CH407L
3.	Structure of credits	3-0-0-3
4.	Offered to	UG
5.	New course/modification to	Modification To CH4021/12
6.	To be offered by	Department of Chemical Engineering
7.	To take effect from	July 2022
8.	Prerequisite	CoT
9.	Course Objective(s): To introduce the principles of corrosion identification, quantification, characterization and mitigation in industry.	
10.	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.	
11.	Textbook(s): 1. Fontana M G, <i>Corrosion Engineering</i> , 3rd Edition, McGraw-Hill Education (2017). 2. Jones D A, <i>Principles and Prevention of Corrosion</i> , 2nd Edition, Pearson Education (2001).	
12.	Reference(s): 1. Reoberge P, <i>Handbook of Corrosion Engineering</i> , 3rd Edition, McGraw-Hill Education (2019). 2. Schweitzer P A, <i>Corrosion Engineering Handbook: Fundamentals of Metallic Corrosion: Atmospheric and Media Corrosion of Metals</i> , 1st Edition, CRC Press (2006).	