INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
भारतीय प्रौद्योगिकी संस्थान तिरुपति
Yerpedu-Venkatagiri Road, Yerpedu Post, Tirupati District, Andhra Pradesh - 517 619

1.	Title of the course	Corrosion Engineering
2.	Course number	CH522L
3.	Structure of credits (L-T-P-C)	3-0-0-3
4.	New course/modification to	Modified with CH407L/CORROSION ENGINEERING
5.	To be offered by	Chemical Engineering
6.	Prerequisite	CoT
7.	**Course Objective(s):** To discuss the principles of corrosion identification, quantification, characterization and mitigation in industry.	
8.	**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.	
9.	**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).	
10.	**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, CRC Press (2006).	