



CORROSION FAILURES AND ANALYSIS

PROF. KALLOL MONDAL

Department of Materials Science and Engineering
Indian Institute of Technology Kanpur

TYPE OF COURSE : New | Elective | UG**COURSE DURATION** : 8 Weeks (26-Jul' 21 - 17-Sep' 21)**EXAM DATE** : 26 Sep 2021**PRE-REQUISITES** : Chemical Thermodynamics, Phase transformation and Electrochemistry**INTENDED AUDIENCE** : Bachelor and Master students; Industry people, where corrosion is a problem;
PhD student working in corrosion**INDUSTRIES APPLICABLE TO** : Oil companies, Chemical companies and Power sector, construction**COURSE OUTLINE :**

The course will focus on citing failures of component due to corrosion and analysis of the corrosion events, which have led to the failures. It will take examples from different fields and industries such as (i) Household, (ii) Construction, (iii) Petrochemical, (iv) Naval structures and (v) Medical. The course will also discuss the possible protection philosophies on the basis of (i) Materials, (ii) Change of environment, (iii) Design, (iv) Coatings, (v) Inhibitors.

ABOUT INSTRUCTOR :

Kallol Mondal is an associate professor in the department of Materials Science and Engineering, IIT Kanpur. His specializations are phase transformations of metals and alloys, corrosion and oxidation behavior and multi-phase steel development.

COURSE PLAN :**Week-1:**Introduction**Week-2:**Corrosion failures**Week-3:**Corrosion failures**Week-4:**Corrosion failures**Week-5:**Protection of Metals and Alloys**Week-6:**Protection of Metals and Alloys**Week-7:**Protection of Metals and Alloys**Week-8:**Choice of protection route for preventing corrosion failure