1.	Title of the course	Process Safety and Industrial Pollution
2.	Course number	CH402L
3.	Structure of credits	3-0-0-3
4.	Offered to	UG
5.	New course/modification to	Modification To CH4103/12
6.	To be offered by	Department of Chemical Engineering
7.	To take effect from	July 2022
8.	Prerequisite	Nil
9.	**Course Objective(s):** To introduce aspects of process and personnel safety, and pollution in the chemical industry.	
10.	**Course Content:** Process safety: process versus personnel safety; Effect of toxicants, dose versus response, threshold limits; Government regulations and evaluation of industrial hygiene; Leakage of liquid and gas; Parameters affecting toxic release and dispersion; Fires and explosions, ignition-flammability diagrams, detonations and blasts, prevention; Identification of reactive chemical hazards, characterization techniques, control; Sizing and design of relief and venting systems; Hazard and operability (HAZOP) studies; Industrial pollution: origin of air, water and land pollutants; Environmental impact assessment; Quality monitoring of major pollutants; Industrial pollution in India; Management of hazardous wastes and pollution control; Introduction to green technologies.	
11.	**Textbook(s):** 1. Crowl D A and Louvar J F, *Chemical Process Safety: Fundamentals with Applications*, 4th Edition, Pearson India (2019). 2. Rao C S, *Environmental Pollution Control Engineering*, 3rd Edition, New Age International (2018).	
12.	**Reference(s):** 1. Kletz T, *What went wrong: Case Histories of Process Plant Disasters and How They Could Have Been Avoided*, 6th Edition, Butterworth-Heinemann (2019). 2. Kletz T and Amyotte P, *Process Plants: A Handbook for Inherently Safer Design*, 2nd Edition, CRC Press (2010). 3. Lees F, *Loss Prevention in the Process Industries: Hazard Identification, Assessment and Control*, 4th Edition, Butterworth-Heinemann (2012). 4. Peirce J J, Vesilind P A and Weiner R, *Environmental Pollution and Control*, 4th Edition, Butterworth-Heinemann (1997).	