

UCH605 PROCESS UTILITIES AND INDUSTRIAL SAFETY

L	T	P	Cr
3	1	0	3.5

Water: Water resources, Storage and characterization, Conditioning.

Steam: Boilers, Steam Handling and distribution, Steam nozzles, Condensate utilization, Steam traps, Flash tank analysis, Safety valves, Pressure reduction valves, Desuperheaters.

Air: Air compressors, Vacuum pumps, Air receivers, Piping systems, Different types of ejectors, Air dryers.

Hazards and Safety: Classifications and assessment of various types of hazards, Risk assessment methods, General principles of industrial safety, Hazards due to fire, explosions, Toxicity and radiations, Industrial hygiene, Maximum allowable concentration and threshold limit value, Protective and preventive measures in hazards control, Introduction to industrial safety regulations.

Case studies of hazardous incidents in industries using HAZOP.

Text Books

1. Vasandhani, V. P., and Kumar, D. S, Heat Engineering, Metropolitan Book Co. Pvt. Ltd. (2009).
2. Crowl, D.A. and Louvar, J.F., Chemical Process Safety-Fundamentals with Applications, Prentice Hall, (2002).

Reference Books

1. Peavy, H. S., and Rowe, D. R, Environmental Engineering, McGraw Hill (1985).
2. Banerjee, S., Industrial Hazards and Plant Safety, Taylor & Francis 2003).
3. Lees, F.P., Prevention in Process Industries. Butterworth's (1996).
4. Sanders, R. E. Chemical Process Safety-Learning from Case Histories, Oxford (2005).
5. Perry, R.H., and Green, D. W, Chemical Engineer's Handbook, McGraw Hill (1997).