

SARDAR PATEL UNIVERSITY
Programme: B.Sc (Industrial Chemistry)
Semester: V
Syllabus with effect from: June - 2013

Paper Code: US05CICH06	Total Credit: 3
Title of Paper: Fluid Mechanics & Heat Transfer	

Unit	Description in detail	Weightage (%)
I	Fluids & their classification, Viscosity, Newtonian and non Newtonian fluids, Static pressure, Manometer, Mechanism of fluid flow, Types of flow, continuity equation, Bernoulli's theorem, friction factor & friction head	25%
II	Fluid moving machineries, Equipments, Pipes and pipe fittings, Pumps Classification and Performance, Reciprocating and Rotary pumps, Centrifugal pumps, Blower, Compressors, Vacuum pump.	25%
III	Modes of heat transfer, Fourier's law, Thermal conductivity, Thermal insulators, Resistance in series and parallel, Heat flow through Sphere and Cylinder, Natural and forced convections	25%
IV	Natural and forced convections, Heat Transfer equipment, Types of Heat Exchanger, Shell and Tube Heat Exchanger, Double Pipe heat Exchanger, Extended surface and plate type heat exchanger.	25%

Basic Text & Reference Books:

- Unit Operations : Volume I & II, by K. A. Gavhane (Nirali Prakashan- Pune)
- Introduction to Chemical Engineering by Walter L Badger and Juline T Banchero (McGraw-Hill Book Co.)
- Unit Operation of Chemical Engineering by Warreh L Mc Cabe & Jullian C Smith (McGraw-Hill Book Co.)
- Chemical Engineering (volume I & II) by J. M. Coulson & K. F. Richardson (Asian Books Pvt. Ltd., New Delhi)

