

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

Paper Code: US05CICH05	Total Credit: 3
Title of Paper: Mechanical Operations	

Unit	Description in detail	Weightage (%)
I	Filtration, Rate equation, Filter media and filter aid, Industrial Filters- Sand filter, Plate & frame filter, Leaf filter, Rotary filter and Centrifugal Filtration.	25%
II	Sedimentation- Batch and continuous sedimentation ,Thickeners,Separation of solids based on specific properties. Clarification equipments. Cyclones. Froth flotation and Jigs.	25%
III	Mixing, Types of mixing problems, Mixing liquids with liquids, mixing liquids with solids, Mixing solids with solids, Mixing viscous masses.	25%
IV	Size reduction and size separation, Primary and secondary crushers, Fine grinders, Methods of operating crusher, Size separation of solids, Industrial screens, Air separation method, Size separation by laws of setting.	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)

