

SYLLABUS :-

Prerequisite - CH20003 or equivalent
Rate governed processes: definitions and terminologies; Membrane separation processes, preparation and characterization of membranes. Principles of reverse osmosis, nanofiltration, ultrafiltration, microfiltration. Osmotic controlled filtration, gel layer controlled filtration; Detailed design and modeling: film theory, similarity solution, integral method; Design of membrane/process modules; Basic principles and modeling of dialysis; Electric field enhanced separation processes : zeta potential, electric double layer; Basic modeling of electric field enhanced filtration. Liquid membrane and its modeling. Basic design of gas separation and pervaporation.
Text Book:1.Membrane Handbook Eds. By W. S. W. Ho and K. K. Sirkar
Reference Book:1.Synthetic membranes : Science, Engineering and Applications, Eds. By P. B. Bunge, H. K. Lonsdale and M. N. dePinho.