

UCH714 MEMBRANE SEPARATION PROCESSES

L	T	P	Cr
3	1	0	3.5

Overview of membrane science and technology: Classification of membrane and membrane based processes, Advantages of membrane processes, Membrane materials

Preparation and characterization of membranes: Fundamental theory and application of membrane processes, Membrane modules, General method of membrane manufacture.

Different membrane processes: Reverse osmosis, Microfiltration, Ultra-filtration, Nano-filtration, Electro-dialysis, Dialysis, Per-evaporation, Gas separation, Membrane distillation, Liquid membrane technology, Transport through membrane, Membrane reactor, Membrane chromatography.

Application of membranes: Application of membranes in bio-separation, Bio-catalytic membrane reactors, Biomedical application of membranes.

Text Books:

1. R.W. Baker, Membrane Technology and Application, John Wiley and Sons Ltd. (2004).
2. Hoffman, E.J., Membrane Separation Technology: Single stage, Multistage and Differential Permeation, (2009).

Reference Books:

1. Porter, M.C., Handbook of Industrial Membrane Technology, Crest Publishing House (2005).