PCE6J004 SEPARATION TECHNOLOGY

Module I:
Rate governed processes, definitions and terminologies.
Membranes: Types and modules, classification of membrane processes, membrane materials, advantages and disadvantages of membrane processes, major areas of application, preparation and characterization of membranes.

Module II:
Principles, advantages, disadvantages, and applications of reverse osmosis, nano-filtration, ultra-filtration, and micro-filtration.

Module III:
Principles, advantages, disadvantages, and applications of dialysis, gas separation, pervaporation, electrodialysis, and liquid membranes.

Module IV:
Facilitated transport, recent advances in membrane processes, and biomedical applications of membranes.

Text and Reference Books:

1. *Perry's Chemical Engineers' Handbook, 8th ed. by D W Green and R H Perry, McGraw-Hill.*
2. *Separation Processes, 2nd ed. by C J King, Dover Publications.*
3. *Handbook of Separation Process by R W Rousseau, Wiley.*
4. *Principles of Mass Transfer and Separation Processes by B K Dutta, PHI.*
5. *Membrane Separation Processes by K Nath, PHI.*
6. *Transport Processes and Separation Process Principles, 4th ed. by C J Geankoplis, Pearson.*
7. *Separation Process Principles, 2nd ed. by J D Seader and E J Henley, Wiley.*