

PCE5I101 TRANSPORT PHENOMENA

Module I:

Momentum Transport: Viscosity and the mechanism of momentum transport, Shell momentum balances and Velocity distributions in laminar flow. The equation of changes for Isothermal systems. Velocity distributions with more than one independent variable. Inter phase transport in isothermal systems.

Module II:

Energy Transport: Thermal conductivity and mechanism of energy transport, shell energy balances and temperature distributions in solids and laminar flow, the equations of change for non - isothermal systems, temperature distribution with more than one independent variable, Inter phase transport in non-isothermal systems.

Module III:

Mass Transport: Diffusivity and the mechanism of mass transport, concentration distributions in solids and laminar flow, the equations of change for multi component systems. concentration distributions with more than one independent variable, inter phase transport in non-isothermal mixtures.

Text Book:

1. *Transport Phenomena, 2nd ed. by R B Bird, W E Stewart, and E N Lightfoot, John Wiley & Sons.*

Reference Books:

1. *Fundamentals of Momentum, Heat, and Mass Transfer, 5th ed. by J Welty, C E Wicks, and R E Wilson, and G L Rorrer, Wiley.*
2. *Introduction to Transport Phenomena: Momentum, Heat, and Mass by B Raj, PHI.*