

GUJARAT TECHNOLOGICAL UNIVERSITY

Chemical Engineering

M.E. Semester: II

Subject Name: **Advance Mass Transfer**

Sr. No.	Course Content
1.	Multi Component Distillation - Selection of operating pressure, Equilibrium for Multi component System, Methods for Multi Component Distillation, Design of Batch Distillation for Multi component with Rectification with constant reflux & constant overhead component, Continuous distillation of multi component system, Energy Conservation in Distillation column, Advance topics in distillation.
2.	Membrane Separation Techniques - Basic Equation for membrane separation for permeable & semi permeable membrane, Membrane types & their selection criteria, Technology based Membrane separation like Micro filtration, Ultra filtration, Reverse Osmosis, Nano filtration
3.	Advances in Absorption - Criteria for selection of packed tower, tray tower, Spray chamber, Venturi Scrubber etc. Design of Falling Film Absorption, Design of Spray Chamber, Design of Venturi Scrubber, Advantage of Falling Film Absorber
4.	Degree of Freedom for Different Equipments
5.	Super heated steam Drying

Text Books:

1. Introduction to Process Engineering and design by S.B.Thakore & B.I. Bhatt
2. Chemical Engineering Handbook 7th edition by R.H.Perry & Green D.
3. Mass Transfer Operation 3rd Edition by R.E.Treybal