

LESSON PLAN OF 4TH SEMESTER(2020-21) CHEMICAL ENGINEERING

DISCIPLINE: CHEMICAL	Semester:-4 TH	NAME OF THE TEACHING FACULTY PRATEEK KUMAR DAS
SUBJECT: MASS TRANSFER- I	No of days per Week Allotted : 04	SEMESTER: APRIL TO AUGUST No of Weeks:- 15
Week	Class/ Day	Theory/ Practical Topics
1 ST	1 st	Importance of mass transfer operations
	2 nd	General principle of mass transfer operations
	3 rd	Classify mass transfer operations
	4 th	Molecular diffusion and inter phase diffusion
2 ND	1 st	Diffusion in gases and liquids
	2 nd	Explain Fick's law
	3 rd	Explain mass transfer coefficient
	4 th	Solve problems on diffusion
3 rd	1 st	Solve problems on diffusion
	2 nd	Types of boiling point diagrams and enthalpy concentration diagrams
	3 rd	Vapour- liquid equilibrium
	4 th	Relative volatility and derive an expression between α & x-y
4 th	1 st	Draw XY data (equilibrium curve) for different system in graph paper
	2 nd	Simple distillation & Derivation of Rayleigh's equation
	3 rd	Simple distillation & Derivation of Rayleigh's equation
	4 th	Solve problems on Rayleigh's equation
5 th	1 st	Solve problems on Rayleigh's equation
	2 nd	Flash distillation and material balance in flash distillation
	3 rd	Continuous rectification of binary system
	4 th	Continuous rectification of binary system
6 th	1 st	Construction of rectification column
	2 nd	Construction of rectification column
	3 rd	Types of trays & re-boiler
	4 th	Types of trays & re-boiler
7 th	1 st	Channeling, weeping, entrainment and flooding
	2 nd	Analyze fractionating column by McCabe and Thiele Method and find out feed plate location (solve simple problems)
	3 rd	Analyze fractionating column by McCabe and Thiele Method and find out feed plate location (solve simple problems)
	4 th	Analyze fractionating column by McCabe

		and Thiele Method and find out feed plate location (solve simple problems)
8 th	1 st	Analyze fractionating column by McCabe and Thiele Method and find out feed plate location (solve simple problems)
	2 nd	Reflux ratio and concept of minimum, optimum and total reflux ratio
	3 rd	Reflux ratio and concept of minimum, optimum and total reflux ratio
	4 th	Plate efficiency, Murphree's efficiency
9 th	1 st	Steam distillation and its application
	2 nd	Azeotropic Distillation
	3 rd	Extractive Distillation
	4 th	Solve problems on distillation
10 th	1 st	Solve problems on distillation
	2 nd	Solve problems on distillation
	3 rd	Principle of absorption
	4 th	Factors affecting rates of absorption
11 th	1 st	Different equipment used for absorption
	2 nd	Different equipment used for absorption
	3 rd	Types of packing materials used in absorption
	4 th	Regular and Random packing
12 th	1 st	Loading, flooding and its effect on pressure drop
	2 nd	Minimum gas-liquid ratio
	3 rd	HETP
	4 th	HTU & NTU
13 th	1 st	Elementary ideas about spray tower
	2 nd	Elementary ideas about wetted wall column
	3 rd	Solve simple problems on Absorption
	4 th	Solve simple problems on Absorption
14 TH	1 st	Principle of adsorption
	2 nd	Types of adsorption
	3 rd	Factors affecting adsorption
	4 th	Different types of adsorbents
15 TH	1 st	Nature of adsorbents
	2 nd	Elutriation, percolation
	3 rd	Industrial application of adsorption
	4 th	Construction and operation of Industrial adsorption equipment