LESSON PLAN OF CHEMICAL ENGINEERING DEPARTMENT

Discipline: Chemical	Semester:3rd	Name of Faculty: Siba Prasad Achary
Subject: Industrial Stoichiometry (TH-4)	No of Days per week class allotted:4	
Week	**ClassDay**	**TheoryTopics**
1st	1st	**CHAPTER-1:UNITSANDDIMENSIONS** Introduction
	2nd	Basicandderivedunitsusedinprocessindustry.
	3rd	Unitsofphysicalandchemicalproperties
	4th	Relationbetweenunitsanddimension
2nd	1st	Unitconversionandsolvenumerical
	2nd	Conceptsofunitoperationandunitprocess
	3rd	Applicationofvariousgraphsinprocesscalculation
	4th	Solvenumerical
3rd	1st	**CHAPTER-2:MOLECONCEPT** Atomicnumber,atomicweightofelements
	2nd	Mol.Wt.,moleunit,molefraction(orpercent)andmassfraction(orpercent),
	3rd	Relationbetweenmoleandmassfraction
	4th	Moleconceptwithrespecttochemicalequation.
4th	1st	Principleofatomconservation.
	2nd	Molecalculationfromreaction
	3rd	Methodsofexpressingcompositionofmixturesandsolutions
	4th	**Solverelatednumericals**
5th	1st	**CHAPTER-3:STOICHIOMETRY** Introduction
	2nd	Conceptoflimitingreactant,Atomicweight,
	3rd	ConceptofMolecularweightandempiricalformula
	4th	Solvednumericalbasedonlimitingreactant,mass-mass andmass volumebasis
6th	1st	ConceptsofEq.weight,valenceofmolecule
	2nd	Solverelatednumerical
	3rd	Conceptsofpreparationofsolution
	4th	Weightandvolumepercentofsolutions
7th	1st	BasicsofNormality,molarityandmolality
	2nd	Numericalonsolutionpreparation
	3rd	Solverelatednumerical
	4th	**CHAPTER-4:GASESANDGASEOUSMIXTURES**

		Introduction
8th	1st	Definegases,differentgaseousmixture
	2nd	DerivationofIdealgasequation
	3rd	DeriveaveragemolecularweightandValuesofR
	4th	Derivationofdensityofgasmixture
9th	1st	Solverelatednumerical
	2nd	Compositionbyvol%andbyweight%relatedtoaveragemolecularweight ofgasmixture
	3rd	SolvetheexamplesandexercisesrelatedtoAvg.molwt.andIdealgase quation.
	4th	ConceptsofPressure,partialpressureandvariouslawsrelatedtoPVT behavior.
10th	1st	ConceptsofStateRaoult'slawandHenry'slaw
	2nd	**CHAPTER-5:MATERIALBALANCEWITHOUTCHEMICALREACTION** Introduction
	3rd	Basicsofchemicalequationandstoichiometry
	4th	Conceptsoflawofconservationofmassandmaterialbalanceover thereaction.
11th	1st	Materialbalanceproblemswithoutchemicalreactionsofunit operations
	2nd	MaterialbalanceofEvaporationandsolvenumerical
	3rd	Materialbalanceofmixingandsolvenumerical
	4th	Materialbalanceofcrystalization
12th	1st	Materialbalanceoverdistillationandsolvenumerical
	2nd	Materialbalanceoverdryingandsolverelatednumerical
	3rd	Materialbalancehumidificationandsolverelatednumerical
	4th	Materialbalanceoverfiltration
13th	1st	Materialbalanceoverabsorption,extraction
	2nd	Solvenumerical
	3rd	**CHAPTER-6:MATERIALBALANCEWITHCHEMICALREACTION** Introduction
	4th	ConceptsofLimitingreactant,Excessreactant
14th	1st	ConceptsofConversion,Selectivity,Yield.
	2nd	Basicconceptsinvolvedinmaterialbalancecalculations.
	3rd	Materialbalanceovercombustion
	4th	Materialbalanceoverchemicalreactioncalculation
15th	1st	Conceptsofheatofcombustionandheatofformation.
	2nd	Conceptofrecycleandbypass,purge
	3rd	Excessairandtheoreticalair
	4th	Numericalbasedoncombustion,Excessairandtheoreticalair