

Discipline: Chemical Engg.	Semester:5th	Name of Faculty: SIBA PRASAD ACHARY
Subject: Chemical Engineering Thermodynamics	No of Daysper week class allotted:4	Semester From: July to December NO. Of Weeks:- 15
Week	Class days	Theory Topic
1 st	1 st – 1	Introduction to thermodynamics and basic concept.
	2 nd -2	Scope and limitations of Thermodynamics
	3 rd -3	To define System, processes, state
	4 th -4	To define properties, state and path function
2 nd	1 st – 5	Concept of heat and work
	2 nd -6	Equilibrium state and phases
	3 rd -7	Zeroth law of Thermodynamics
	4 th -8	The concept of heat reservoir, heat engine, and heat pump.
3 rd	1 st – 9	Solve simple problem on heat engine and heat pump
	2 nd -10	Reversible and irreversible process
	3 rd -11	Solve simple problems
	4 th -12	State and explain first law of Thermodynamics
4 th	1 st – 13	Concept of internal energy
	2 nd -14	Define Enthalpy, heat capacity
	3 rd -15	First law of thermodynamics for cyclic process
	4 th -16	First law of thermodynamics for non-flow process
5 th	1 st – 17	First law of thermodynamics for flow process
	2 nd -18	Solve numerical on application of 1 ST law of thermodynamics
	3 rd -19	Solve numerical on application of 1 ST law of thermodynamics
	4 th -20	P-V-T behavior of pure fluid
6 th	1 st – 21	Equation of state and ideal gas
	2 nd -22	Equation of state and ideal gas
	3 rd -23	constant temperature process
7 th	1 st – 25	Adiabatic process for ideal gas
	2 nd -26	Constant volume process for ideal gas
	3 rd -27	constant pressure process for ideal gas
	4 th -28	Exam Related to chapter1 and chapter 2
8 th	1 st – 29	Numerical based on heat effect
	2 nd -30	State and explain second law of thermodynamics
	3 rd -31	Application of second law of thermodynamics
	4 th -32	Concept of entropy.
9 th	1 st – 33	Numerical based on second law of thermodynamics and entropy
	2 nd -34	Calculate change of entropy for various conditions
	3 rd -35	Third law of Thermodynamics

	4 th -36	Numerical based on third law of thermodynamics
10 th	1 st – 37	Introduction to thermodynamic properties of pure fluid
	2 nd -38	Classify thermodynamic properties
	3 rd -39	Work function and Gibb's free energy and Gibb's phase rule.
	4 th -40	Various relationships among thermodynamic properties
11 th	1 st – 41	Concept of Maxwell equation, clapeyron equation
	2 nd -42	Concept of entropy-heat capacity relation
	3 rd -43	Differential equation for entropy
	4 th -44	Effect of temperature, pressure and volume on U,H and S, relationship between C _p and C _v
12 th	1 st – 45	Numerical on Maxwell equation, clapeyron equation, C _p and C _v
	2 nd -46	Gibb's-Helmholtz equation.
	3 rd -47	Fugacity co-efficient, effect of temperature on fugacity
	4 th -48	Effect of pressure on fugacity
13 th	1 st – 49	Fugacity of pure gases, solids and liquids
	2 nd -50	Concept of activity on activity
	3 rd -51	Effect of pressure and temperature on activity
	4 th -52	Effect of pressure and temperature on activity
14 th	1 st – 53	Concept of Refrigeration and liquefaction process
	2 nd -54	Concept of liquefaction process
	3 rd -55	Solve numerical on properties of fluid
	4 th -56	Revision of chapter 1
15 th	1 st – 57	Revision of chapter 2
	2 nd -58	Revision of chapter 3
	3 rd -59	Revision of chapter 4
	4 th -60	Revision of chapter 5