Lecturer Name- Anish Dewange

Detailed Teachning plan

Semester :- 4th **Department :- CHEMICAL ENGG.** **Session :- APRIL-MAY- 2025** **Subject-MO**

S.No.	Lecture No.	Unit No.	Topics to be covered	Planned Date	Execution Date	Remarks
1	01	Unit-1	Characterization of solid particle	3/2/25	3/2/25	
2	01		Particle size analysis	4/2/25	6/2/25	
3	01		Differential and Cumulative analysis	5/2/25	8/2/25	
4	02		Average particle size	6/2/25	13/2/25	
5			Volume surface mean diameter	to	to	
6			Arithmetic mean diameter			
7			Mass mean diameter	10/2/25	14/2/25	
8			Volume mean diameter			
9			No. of particle in mixture			
10	01		Screen Analysis	11/2/25	18/2/25	
11	01		Standard screen series	12/2/25	19/2/25	
12	02		Simple problem on screen analysis	13 to 14/2/25	25/2/25	
13	02		Storage of solids	17/2/25	28/2/25	
14			Bin, Silo storage and discharging	to 18/2/25		
15	02		Industrial screening equipment's	19/2/25	6/3/25	
16			Gyrating and vibrating screens. Its merits and demerits.	to 20/2/25		
17	01		Comparison of ideal and actual screen	21/2/25	8/3/25	
18	01		Standard screens : Tyler and BSS	24/2/25	10/3/25	
19	01		Screen effectiveness	25/2/25	19/3/25	
20	01		Capacity and effectiveness of screen	26/2/25	18/3/25	
21	02		Simple problem on screen effectiveness	27 to 28/2/25	20/3/25	
22	03		Handlings of solids	3/3/25	22/3/25	
23			Construction and working of Belt conveyor	to		
24			Construction and working of Screw conveyor and bucket elevator	to	to	
25			Construction and working of Pneumatic conveying system	5/3/25	27/3/25	
26						
27	01		2.1Criteria of size reduction	6/3/25	28/3/25	
28	01	Unit-2	2.1.1 Energy and Power requirement	7/3/25	29/3/25	
29			2.1.2 Crushing efficiency			
30	03		2.2 Law's of crushing	10/3/25	1/4/25	
31			2.2.1 Rittinger's law	to	to	
32			2.2.2 Kick's law	12/3/25	4/4/25	
33			2.2.3 Bond's law			
34			2.2.4 Work index			
35						
36	03		2.3 Size reduction equipment	17/3/25	5/4/25	
37			2.3.1 Principle,	to	to	
38			construction and working of crushers	19/3/25	8/4/25	
39			2.3.2 Principle,			
40			construction and working of grinders			
41			2.3.3 Principle,			
42			construction and working of ultra fine grinders			
43	01		2.4 Open circuit and closed circuit operation	20/3/25	11/4/25	
44	02		2.5 Simple numerical problems	21/3/25	12/4/25	
45				& 24/3/25	to 15/4/25	
46						

47	01	Unit-3	3.1 Agitation of liquids	25/3/25	17/4/25
48	01		3.1.1 Purpose of agitation	26/3/25	19/4/25
49	01		3.1.2 Agitation	27/3/25	21/4/25
50	01		equipment	1/4/25	22/4/25
51	02		3.1.3 Impellers	2/4/25	25/4/25
52	01		3.1.4 Flow pattern in agitated vessels	3/4/25	28/4/25
53	01		3.2 Mixing of pastes	4/4/25	2/5/25
54	02		3.2.1 Representative types of mixers for paste	7/4/25	3/5/25
55	02		3.2.2 Representative types of mixers for plastic masses	9/4/25	8/5/25
56	02		3.3 Criteria of mixer effectiveness and mixing index	11/4/25	10/5/25
57	01		3.4 Rate of mixing	15/4/25	13/5/25
58	02		3.5 Simple problems on mixing index	16/4/25	15/5/25
59	02	Unit-4	4.1 Drag, drag coefficient and stoke's law	17/4/25	19/5/25
60	01		4.1.1 Relation between drag coefficient and Reynolds number	22/4/25	23/5/25
61	01		4.1.2 Motion of particles through fluids	23/4/25	26/5/25
62	01		4.1.2.1 Equation for one dimensional motion of particles through fluids	24/4/25	27/5/25
63			4.1.2.2 Terminal velocity	25/4/25	1/7/25
64	01		4.1.2.3 Motion of spherical particles	28/4/25	3/7/25
65	01		4.1.2.4 Free and Hindered settling	29/4/25	4/7/25
66	01		4.1.3 Sedimentation	30/4/25	7/7/25
67	01		4.1.4 Classification and flotation	1/5/25	8/7/25
68	02		4.1.5 Electrostatic separator	5/5/25	11/7/25
69	01		Cyclone separator	6/5/25	12/7/25
70			Bag dust Collector	7/5/25	14/7/25
71	01		5.1 Theory of filtration	8/5/25	15/7/25
72	01		5.2 Relation between thickness of cake and volume of filtrate	13/5/25	17/7/25
73	01	Unit-5	5.3 Constant rate and constant pressure filtration	14/5/25	19/7/25
74	01		5.4 Filter media and filter aid	19/5/25	21/7/25
75	02		5.5 Construction and working of plate and frame non washing and washing type filter press	20/5/25	22/7/25
76	01		5.6 Construction and working of leaf filter	21/5/25	25/7/25
77	01		5.7 Construction and working of continuous rotary drum filter	22/5/25	26/7/25
78	01		Simple problems on filtration	26/5/25	28/7/25
79	01				
80	02				

Lecturer Name- Anish Dewan

Detailed Teachning plan

Semester :- 4th Department :- CHEMICAL ENGG. Session :- APRIL-MAY-2025 Subject-OPT

S.No.	Lecture No.	Unit No.	Topics to be covered	Planned Date	Execution Date	Remarks
1	01	Unit-1	Oil Industry	2/2/25	8/2/25	
2	01	Unit-1	Difference between oil, fats and waxes	4/2/25	14/2/25	
3	01	Unit-1	Preparation of raw materials for processes:	6/2/25	7/3/25	
4	01	Unit-1	Extraction of oil	7/2/25	8/3/25	
5	01	Unit-1	Refining	9/2/25	10/3/25	
6	01	Unit-1	Bleaching	11/2/25	12/3/25	
7	01	Unit-1	Hydrogenation	13/2/25	18/3/25	
8		Unit-1				
9	01	Unit-1	Major engineering problems of oil industries and their remedies	14/2/25	21/3/25	
10	01	Unit-1	Economics.	16/2/25	22/3/25	
11	01	Unit-1	Soap Industry	18/2/25	24/3/25	
12	02	Unit-1	Manufacturing of soap and detergents	20/2/25	26/3/25	
13	02	Unit-1	Process description and flow chart of soap	23/2/25	28/3/25	
14	01	Unit-1	Types of soaps.	27/2/25	29/3/25	
15		Unit-1	Process description and flow chart of soap	—		
16	01	Unit-1	Physical and chemical properties of soap	28/2/25	2/4/25	
17	01	Unit-1	Detergent Industry	2/3/25	4/4/25	
18	02	Unit-1	Process description and flow chart	6/3/25	5/4/25	
19	01	Unit-1	Major engineering problems	9/3/25	11/4/25	
20	01	Unit-1	Detergent Builder	11/3/25	12/4/25	
21	01	Unit-2	Introduction to pulp and paper.	13/3/25	16/4/25	
22	01	Unit-2	Manufacture of pulp	14/3/25	19/4/25	
23	01	Unit-2	Process description and flow chart	16/3/25	21/4/25	
24	01	Unit-2	Major engineering problems	18/3/25	23/4/25	
25	01	Unit-2	Uses and economics	23/3/25	26/4/25	
26	01	Unit-2	Manufacture of paper	25/3/25	28/4/25	
27	01	Unit-2	Process description and flow chart	27/3/25	2/5/25	
28	01	Unit-2	Major engineering problems	28/3/25	3/5/25	
29	01	Unit-2	Uses and economics	30/3/25	5/5/25	
30	01	Unit-2	Types of paper product	1/4/25	7/5/25	
31	01	Unit-2	Dyes and Intermediate	4/4/25	9/2/25	
32		Unit-2	Introduction	—		
33	02	Unit-2	Classification of dyes	6/4/25	10/5/25	

34	01	Unit-2	Manufacturing of some common dyes for fabric and hair.	10/4/25	16/5/25	
35	01	Unit-3	Principles of polymerization	13/4/25	17/5/25	
36	01	Unit-3	Types of polymerization and difference between them.	15/4/25	19/5/25	
37	01	Unit-3	Mechanism of polymerization	24/4/25	21/5/25	
38	01	Unit-3	Methods of polymerization	25/4/25	23/5/25	
39	01	Unit-3	Difference amongst monomer, polymer and resin	27/4/25	24/5/25	
40	01	Unit-3	Difference amongst the fibre , filament and thread	29/4/25	26/5/25	
41	01	Unit-3	Rubber Industry	2/5/25	2/7/25	
42	01	Unit-3	Difference between natural and synthetic rubber	4/5/25	4/7/25	
43	01	Unit-3	Manufacturing of Styrene-Butadiene Rubber (SBR)	6/5/25	7/7/25	
44	01	Unit-3	Process description and flow chart	8/5/25	9/7/25	
45	01	Unit-3	Vulcanization of rubber	9/5/25	11/7/25	
46	01	Unit-3	Plastic Industry	11/5/25		
47	01	Unit-3	Classification of plastic	13/5/25	—	
48	01	Unit-3	Introduction, uses, properties and recognition of polymer plastics like:- Nylon, LDPE, HDPE, PP, PET,PU, PVC, PVDC, ABS, PS AND	15/5/25	12/7/25	
49		Unit-3	Teflon	to 12/5/25		
50						
51		Unit-4	Raw material, reactions, flow diagram, process description, major engineering problems, economics of the following industrial solvents	—		
52	02	Unit-4	Methanol	20/5/25	14/7/25	
53	02	Unit-4	Acetone	23/5/25		
54	02	Unit-4	N-Hexane	25/5/25		
55	02	Unit-4	Ethyl alcohol	30/5/25	16/7/25	
56	02	Unit-4	Acetic acid	1/6/25		
57	07	Unit-5	Pesticides	5/6/25		
58		Unit-5	Classification of pesticides	6/6/25		
59		Unit-5	Organo -Chlorine	8/6/25	18/7/25	
60		Unit-5	Organo -phosphorus	10/6/25		
61		Unit-5	Organo carbamate	12/6/25		
62		Unit-5	Pyrethroids	13/6/25		
63		Unit-5	Biopesticide	15/6/25		
64		Unit-5	Harmful effects of Pesticides	17/6/25		
65		Unit-5	Biofuels	19/6/25	19/7/25	
66		Unit-5	Introduction to Bioethanol, biomass biodiesel and biogas	20/6/25		
67		Unit-5	Thermochemical and biochemical conversion of biomass to biofuels	22/6/25		
68		Unit-5	Bioethanol production from sugarcane	24/6/25	28/7/25	
69		Unit-5	Bioethanol production from Rice grain	27/6/25		
70		Unit-5	Sugar	29/6/25	26/7/25	
71		Unit-5	Process description and flow chart	1/7/25	28/7/25	
72		Unit-5	Major engineering problems	3/7/25		

Lectures Name - Anish Devangan

Detailed Teachning plan

Semester :- 6th Department :- CHEMICAL ENGG. Session :- APRIL-MAY- 2025 Subject-CEK

S.No.	Lecture No.	Unit No.	Topics to be covered	Planned Date	Execution Date	Remarks
1	01	Unit-1	Introduction	7/1/25	7/1/25	
2	01	Unit-1	Chemical Kinetics	8/1/25	8/1/25	
3	02	Unit-1	Classification of reactions	9/1/25	9/1/25 to 10/1/25	
4	01	Unit-1	Variables affecting the rate of reaction	20/1/25	21/1/25	
5	01	Unit-1	Definition of reaction rate	13/1/25	22/1/25	
6	01	Unit-1	Elementary and Non elementary reaction	15/1/25	23/1/25	
7	01	Unit-1	Molecularity and Order of reaction	16/1/25	24/1/25	
8	01	Unit-1	Rate constant(K)	17/1/25	27/1/25	
9	01	Unit-1	Effect of temperature on rate constant	20/1/25	28/1/25	
10	01	Unit-1	Arrhenius theory	21/1/25	29/1/25	
11	01	Unit-1	Collision theory	22/1/25	3/2/25	
12	01	Unit-1	Transition state	23/1/25	4/2/25	
13	01	Unit-1	Activation energy and temperature dependency	24/1/25	5/2/25	
14	02	Unit-1	Numerical	to 28/1/25	6/2/25	
15						
16	01	Unit-2	Order of reaction	28/1/25	13/2/25	
17	01	Unit-2	Zero order reaction	29/1/25	14/2/25	
18	01	Unit-2	First order reaction	30/1/25	18/2/25	
19	01	Unit-2	Second order reaction	31/1/25	19/2/25	
20	01	Unit-2	Methods for determining rate expression	3/2/25	21/2/25	
21	01	Unit-2	Differential rate expression	4/2/25	22/2/25	
22	01	Unit-2	Integral rate expression	5/2/25	6/3/25	
23	02	Unit-2	Half-life period	6/2/25 to 7/2/25	7/3/25	
24						
25	01	Unit-3	Concept of Batch reactor	10/2/25	11/3/25	
26	01	Unit-3	Advantage and disadvantage of Batch reactor	11/2/25	12/3/25	
27	01	Unit-3	Performance equation of Batch reactor	12/2/25	18/3/25	
28	01	Unit-3	Constant volume batch reactor	13/2/25	19/3/25	
29	01	Unit-3	Variable volume batch reactor	14/2/25	20/3/25	
30	01	Unit-3	Total Pressure Method of	17/2/25	21/3/25	

31						
32	01	Unit-4	Concept of PFR	18/2/25	24/3/25	
33	01	Unit-4	Advantage and disadvantage of PFR	19/2/25	26/3/25	
34	01	Unit-4	Performance equation of PFR	20/2/25	27/3/25	
35	03	Unit-4	Numerical	21/2/25	28/3/25	
36	01	Unit-4	Concept of CSTR	24/2/25	1/4/25	
37	01	Unit-4	Advantage and disadvantage of CSTR	28/2/25	2/4/25	
38	01	Unit-4	Performance equation of CSTR	3/3/25	3/4/25	
39	03	Unit-4	Numerical	4/3/25	4/4/25	
40	02	Unit-4	PFR in series& parallel	7/3/25	7/4/25	
41	02	Unit-4	CSTR in series& parallel	10/3/25	8/4/25	
42	02	Unit-4	CSTR and PFR in series	17/3/25	11/4/25	
43	02	Unit-4	CSTR and PFR in parallel	19/3/25	15/4/25	
44	03	Unit-4	Numerical	21/3/25	16/4/25	
45						
46		Unit-5	Concept of Homogenous and Heterogeneous reaction	27/3/25	17/4/25	
47		Unit-5	Nature, type and mechanism of catalytic reactions	1/4/25	21/4/25	
48		Unit-5	Properties of solid catalyst	2/4/25	22/4/25	
49		Unit-5	Catalyst Preparation	4/4/25	23/4/25	
50		Unit-5	Catalyst promoter and inhibitor	7/4/25	24/4/25	
51		Unit-5	Catalyst deactivation, catalyst poisoning and regeneration	8/4/25	28/4/25	
52		Unit-5	Autocatalytic reaction	10/4/25	29/4/25	

417

Teaching Plan 2025

Semester :-6th **Department :- CHEMICAL ENGG.** **Session :- May-June 25** **Subject-ST 2**

S.No.	Lecture No.	Unit No.	Topics to be covered	Planned Date	Execution Date	Remarks
1		Unit-1	Humidification and Dehumidification Introduction	28/04/25	28/04/25	
2		Unit-1	Humidification and Dehumidification Definition and Terminology	29/04/25	29/04/25	
3		Unit-1	Relative and Percentage humidity, Relation between Percentage and Relative humidity	28/04/25	28/04/25	
4		Unit-1	Absolute and Molal humidity, Humid heat and Humid volume	01/05/25	01/05/25	
5		Unit-1	Enthalpy of pure substances and total enthalpy, Vapor – Liquid Equilibrium (VLE)	02/05/25	02/05/25	
6		Unit-1	Dew Point Wet bulb and Dry bulb temperature	03/05/25	03/05/25	
7		Unit-1	Relation of wet bulb and dry bulb temperature with humidity and other thermal properties of air	03/05/25	03/05/25	
8		Unit-1	Adiabatic saturation temperature Difference between adiabatic saturation temperature and wet bulb temperature	00/00/25	00/00/25	
9		Unit-1	Psychrometric chart and its use,Lewis relation	07/05/25	07/05/25	
10		Unit-1	Measurement of Humidity,Wet bulb methods, Dew point method	08/05/25	08/05/25	
11		Unit-1	Cooling Tower, Classification, Operations and working	09/05/25	09/5/25	
12		Unit-2	Drying Definitions Bone dry solid, Moisture content (wet and dry basis)	08/01/25	08/01/25	
13		Unit-2	Free and Equilibrium moisture, Bound and Unbound Moisture	08/01/25	08/01/25	
14		Unit-2	Equilibrium between drying air and moisture content of solids	09/01/25	09/01/25	
15		Unit-2	Dryer, Classification of drying equipment, Direct and Indirect Dryer,Batch and Continuous Dryer	10/01/25	10/01/25	
16		Unit-2	Drying Mechanism, Rate of drying, Constant drying, Conditions of drying air	15/01/25	15/01/25	
17		Unit-2	Constant and falling rate period, Calculation of total drying time	16/01/25	16/01/25	
18		Unit-2	Construction, Working, Advantages and Disadvantages of dryers: Tray dryer,	17/01/25	17/01/25	
19		Unit-2	Construction, Working, Advantages and Disadvantages of dryers, Tunnel dryer	20/01/25	20/01/25	
20		Unit-2	Construction, Working, Advantages and Disadvantages of dryers, Rotary dryer,	21/01/25	21/01/25	
21		Unit-2	Construction, Working, Advantages and Disadvantages of dryers, Drum dryer	23/01/25	23/01/25	
22		Unit-2	Construction, Working, Advantages and Disadvantages of dryers, fluidized bed dryer	24/01/25	24/01/25	
23		Unit-2	Construction, Working, Advantages and Disadvantages of dryers, spray dryer			
24		Unit-2	Numerical problems	27/30/31/01/25	29/30/31/01/25	
25		Unit-3	Crystallization, Introduction	03/04/25	03/04/25	
26		Unit-3	Saturated and super saturated solutions	05/04/25	05/04/25	
27		Unit-3	Crystallization from vapor, liquid melt and solution			
28		Unit-3	Solubility Curve	06/04/25	06/04/25	
29		Unit-3	Crystallization, Theory of solubility and crystallization	12/04/25	12/04/25	
30		Unit-3	Crystal geometry, lattice arrangement, some common crystal shapes	13/04/25	13/04/25	
31		Unit-3	Importance and objective of industrial crystallization	14/04/25	14/04/25	
32		Unit-3	Crystallizing Equipment Agitated batch crystallizers			
33		Unit-3	Swenson Walker crystallizers	19/04/25	19/04/25	

Abhishek Sen

Teaching Plan

33		Unit-3	Different types of Fire Extinguishers and their application	26/03/25	26/03/25	
34		Unit-3	Ventilation, Sprinkler	27/03/25	27/03/25	
35		Unit-3	Deluge and Foam System,	27/03/25	27/03/25	
36		Unit-3	Fire and Gas detection system and their up-keeping	28/03/25	28/03/25	
37		Unit-4	Plant Safety Causes and sources of accidents	23/04/25	23/04/25	
38		Unit-4	General safety rules, Plant safety	25/04/25	25/04/25	
39		Unit-4	Personal protective devices	26/04/25	26/04/25	
40		Unit-4	Factory Act 1948	29/04/25	29/04/25	
41		Unit-4	Safety organization	01/05/25	01/05/25	
42		Unit-4	Objective of safety organization			
43		Unit-4	Safety committee	02/05/25	02/05/25	
44		Unit-4	Plant safety inspection	03/05/25	03/05/25	
45			Safety training			
46		Unit-4	Economics aspect of safety	06/05/25	06/05/25	
47		Unit-4	General safety awareness	07/08/09/25	07/08/09/25	
48		Unit-4	Safety Health and Environment			
49		Unit-5	Overview of petroleum acts	01/04/25	01/04/25	
50		Unit-5	Overview of OISD (Oil Industry Safety Directorate) Risk	02/04/25	02/04/25	
51		Unit-5	Environment Assessment Safety audit	03/04/25	03/04/25	
52		Unit-5	Pollution and its Control	04/05/08/25	04/05/08/25	
53		Unit-5	Pollution Control equipments			
54		Unit-5	Water Pollution	09/04/25	09/04/25	
55		Unit-5	Solid Waste	11/04/25	11/04/25	
56		Unit-5	Noise Pollution	14/04/25	14/04/25	
57		Unit-5	Protective Equipment Equipment Safety Systems	15/04/25	15/04/25	
58		Unit-5	Fire Fighting Equipment	16/04/25	16/04/25	
59		Unit-5	Color coding of pipelines	17/04/25	17/04/25	
60		Unit-5	Safety signs in petroleum industry	19/04/25	19/04/25	
61		Unit-5	Application of safety color code	22/04/25	22/04/25	

Abhishek Sir

Teaching Plan

Semester :- 6th | Department :- CHEMICAL ENGG. | Session :- May-June 2025 | Subject-PMS

S.No.	Lecture No.	Unit No.	Topics to be covered	Planned Date	Execution Date	Remarks
1		Unit-1	Introduction to maintenance	07-01-25	07-01-25	
2		Unit-1	Concept and objective of maintenance	08-01-25	08-01-25	
3		Unit-1	Types of maintenance, their significance, advantages and disadvantages.	09/11/01-25	09/11/01/25	
4		Unit-1	Planning and scheduling of maintenance activity	14/01/25	14/01/25	
5		Unit-1	Economics aspects of maintenance	15/01/25	15/01/25	
6		Unit-1	Organization structure of maintenance department	16/01/25	18/01/25	
7		Unit-1	Control and co-ordination of various related	18/01/25	18/01/25	
8		Unit-2	Various types of problems and their maintenance	21/22/01/25	21/22/01/25	
9		Unit-2	Piping systems maintenance	23/25/01/25	23/01/25	
10		Unit-2	Joints maintenance	28/01/25	25/28/01/25	
11		Unit-2	Valves maintenance	29/30/01/25	29/30/01/25	
12		Unit-2	Pumps maintenance	01/02/25	01/02/25	
13		Unit-2	Blowers and compressors maintenance	04/05/02/25	04/05/02/25	
14		Unit-2	Boiler/evaporators maintenance	06/08/02/25	06/08/02/25	
15		Unit-2	Furnaces and kilns maintenance	12/13/02/25	12/13/02/25	
16		Unit-2	Double pipe, shell and tube heat exchangers maintenance	14/18/02/25	14/18/02/25	
17		Unit-2	Pressure vessels maintenance	19/02/25	19/02/25	
18		Unit-2	Distillation columns and crystallizers maintenance	25/27/02/25	25/28/02/25	
19		Unit-3	Introduction to Fire	28/02/25	28/02/25	
20		Unit-3	Fire triangle and Fire tetrahedron	01/03/25	01/03/25	
21		Unit-3	Classification of Fire: Class A,B, C,D,E	04/03/25	04/03/25	
22		Unit-3	Terms related to Fire	05/03/25	05/03/25	
23		Unit-3	Flash Point Fire Point	06/03/25	05/03/25	
24		Unit-3	Auto Ignition Temperature	07/03/25	06/03/25	
25		Unit-3	Lower Flammable Limit Upper Flammable	08/03/25	07/08/03/25	
26		Unit-3	Factors affecting Lower Flammable Limit and Upper	11/03/25	11/03/25	
27		Unit-3	Explosion Introduction	12/03/25	12/03/25	
28		Unit-3	Classification of Explosion	18/03/25	18/03/25	
29		Unit-3	Detonation, Deflagration, Confined explosion	19/03/25	19/03/25	
30		Unit-3	Boiling liquid expanding vapor explosion	20/03/25	20/03/25	
31		Unit-3	Lower Explosive Limit Upper Explosive Limit	22/03/25	22/03/25	
32		Unit-3	Prevention of Fires & Explosion	24/03/25	24/03/25	

Abhishek Sao

Teaching plan

34		Unit-3	Batch and Continuous vacuum crystallizers	20/4/25	20/04/25	
35		Unit-3	~~Crystallization Process Nucleation, Methods of nucleation~~ Primary and Secondary nucleation	27/04/25	27/28/04/25	
36		Unit-3	Problem of Spurious Nucleation Crystal Growth	28/03/25	03/03/25	
37		Unit-3	Rate of Crystal Growth and Delta L (ΔL) law, Effect of heat on size and growth of crystal	05/03/25	05/03/25	
38		Unit-3	Particle Size Distribution of Crystals, Caking of crystals and its prevention	06/03/25	06/03/25	
39		Unit-3	Crystallization Method, Cooling a solution or melt Evaporation Adiabatic evaporative cooling	06/03/25		
40		Unit-3	Numerical problems	07/10/03/25	07/10/03/25	
41		Unit-4	Leaching, Definitions and industrial application of leaching	17/03/25	17/03/25	
42		Unit-4	Preparation of Solid, Elutriation and percolation, Percolation tanks and agitated vessels	19/03/25	19/03/25	
43		Unit-4	Leaching Process, Principle of leaching process, Rate of leaching	20/03/25	20/03/25	
44		Unit-4	Effect of temperature on leaching	21/03/25	21/03/25	
45		Unit-4	Equilibrium in leaching, Type of leaching process			
46		Unit-4	Desirable characteristic of solvent	24/03/25	24/03/25	
47		Unit-4	Concept of variable and constant underflow	24/03/25	24/03/25	
48		Unit-4	Operations of Leaching Equipment	26/03/25	26/03/25	
49		Unit-4	Kennedy extractor			
50		Unit-4	Dorr Agitator/classifier	27/03/25	27/03/25	
51		Unit-4	Bollman extractor	28/03/25	28/03/25	
52		Unit-4	Hildebrandt extractor	28/03/25	01/04/25	
53		Unit-4	Rotocel extractor	01/04/25	02/04/25	
54		Unit-4	Calculation of stage efficiency	2/04/25	03/04/25	
55		Unit-5	Extraction, Definition, Difference between leaching & extraction	3/04/25	03/04/25	
56		Unit-5	Comparison with distillation as a separation operation	04/04/25	04/04/25	
57		Unit-5	Fields of application of extraction	05/04/25	05/04/25	
58		Unit-5	Desirable characteristics of solvent for extraction	08/04/25	08/04/25	
59		Unit-5	Selectivity and distribution coefficient with respect to extraction	09/4/25	09/04/25	
60		Unit-5	Theory and Concept, Theoretical or ideal stage, Overall stage efficiency	11/04/25	11/04/25	
61		Unit-5	Determination of number of stages, Height of Transfer Units Transfer Units (NTU)	12/04/25	12/04/25	
62		Unit-5	Type of Extraction Dispersion extractors	15/04/25	15/04/25	
63		Unit-5	Reactive Extraction Extraction of biomolecules	16/17/04/25	16/17/04/25	
64		Unit-5	Supercritical fluid extraction Representation of ternary system on triangular diagram	19/21/04/25	19/21/04/25	
65		Unit-5	Pulse column	22/23/04/25	22/23/04/25	
66		Unit-5	Mechanically agitated extractor	24/25/04/25	24/25/04/25	

Abhishek Sen

(RPT) Refinery and petrochemical Technology

Detailed Teachning plan

Semester :- 6th Department :- Chemical Session :- APR-MAY 25-

S.No.	Lecture No.	Unit No.	Topics to be covered	Planned Date	Execution Date	Remark
1		1.0	Overview of petroleum Refinery	04/02/25	07/02/25	
2			& Petrochemical Industries	07/02/25	09/02/25	
3			1.1 Crude oil Origin, explo-	09/02/25	11/02/25	
4			nation, classification and	11/02/25	14/02/25	
5			composition	14/02/25	18/02/25	
6			1.2 Overview of petrochemical	18/02/25	21/02/25	
7			Industries	21/02/25	23/02/25	
8			1.3 Safety aspects of oil sector,	23/02/25	28/02/25	
9			Petroleum and refinery industries			
10		2.0	Petroleum Refining process	04/02/25	04/02/25	
11			2.1 Introduction			
12			2.2 Pretreatment of crude			
13			oil, Dehydration, Desalting,	03/02/25	03/2/25	
14			2.3 Crude oil Distillation			
15			Process			
16			2.4 Major petroleum products	04/02/25	04/02/25	
17			their composition, properties	07/02/25	08/02/25	
18			and uses			
19			gasoline, kerosene, Jet fuel,	8/02/25	08/02/25	
20			Diesel, Lube oil, Naphtha	10/02/25	10/02/25	
21		3.0	Treatment Techniques	11/02/25	11/02/25	
22			3.1 Introduction of treatment	13/02/25	13/02/25	
23			techniques			
24			3.2 Physical and chemical	15/02/25	15/02/25	
25			impurities in petroleum fraction	17/02/25	17/02/25	
26			3.3 Acid and caustic treatment	20/02/25	20/02/25	
27			3.4 Aviation turbine fuel (ATF)	22/02/25	22/02/25	
28			3.5 Drying and sweetening	24/02/25	24/02/25	
29			3.6 Hydrogen separation from	25/02/26	27/02/25	
30			gas -			

Dhananjay Chaturvedi

Detailed Teachning plan (RPT) Refinery and petrochemical Technology

Semester :- 6th Department :- Chemical Session :- Apr-may 2025 Subject

S.No.	Lecture No.	Unit No.	Topics to be covered	Planned Date	Execution Date	Remarks
1		4.0	Thermal Processes			
2		4.0	Secondary/conversion	07/03/25	03/03/25	
3		"	Processes			
4			4.1 Thermal processes	03/03/25	4/04/03/25	
5			Steam cracking, Coking			
6			Process, Vis breaking	04/03/25	10/02/25	
7			4.2 Catalytic processes			
8			Catalytic reforming, fluid	10/03/25	11/03/25	
9			catalytic cracking			
10			4.3 Alkylation	17/03/25	18,20/03/25	
11			Sulphuric acid alkylation.			
12			Hydroflouric acid alkylation	24/03/25	24/24/3/25	
13			4.4 polymerization	24/03/25	27/29/03/25	
14			4.5 Isomerization			
15		5.0	Major intermediates and petro-	01/04/25	03/04/25	
16			chemical products	03/04/25	03/04/25	
17			5.1 feed stock for petrochemicals	05/04/25	07/02/25	
18			5.2 Hydrocarbon and non-hydrocarbon	07/04/25	12/04/25	
19			intermediates	12/04/25	15/04/25	
20			5.3 Major petrochemical	17/04/25	19/04/25	
21			products their manufacturing	19/04/25	21,22/04/25	
22			process, Properties and	24/04/25	24/28/04/25	
23			application like polystyrene	28/04/25	29/04/25	
24			polypropylene, HDPE/LDPE	01/05/25	02/05/25	
25		"	5.3.1 Polyster, polypropylene	02/05/25	03/05/25	
26			Poly Butadiene rubber,	03/05/25	05/05/25	
27			Styrene Butadiene Butadiene	05/05/25	06/05/25	
28			rubber, Polytetra, fluoroe-	08/05/25	09/05/25	
29			thylene (PTFE			
30			SAN, ABS			

Dhananjay Chaturvedi