



BENGAL SCHOOL OF TECHNOLOGY

AUTONOMOUS

Estd. by Supreme Educational Development and Charitable Organization (SEDCO)

Recognised by UGC & included u/s 2(f) of UGC Act 1956

Approved by Pharmacy Council of India, New Delhi

Affiliated to: Maulana Abul Kalam Azad University of Technology (MAKAUT) &

West Bengal State Council of Technical and Vocational Education and Skill Development (WBST&VE&SD)

Accredited by NAAC with "A" Grade, NBA for B. Pharm & QCI

Lesson Plan

Class: B.Pharm 2nd year, 3rd semester

Session: 2026-2027

Date of Commencement of Session: 30.07.2026

Subject Name: Physical Pharmaceutics I

Subject code: PT-316

Faculty In charge: Mrs. Annesha Chakraborty

Schedule of allotted class work (w.e.f)

Days	Monday	Tuesday	Wednesday	Thursday	Friday
Time/period	-	-	-	12:40 PM-1:40PM	11:40 AM-12:40 AM
Section A	-	-	-	10:40 AM-11:40 AM	9:40 AM-10:40 AM
Section B	-	-	-		

Available Periods/week 4 Available periods in the total semester 28 Extra Classes _____ Guest

Lectures planned if any with justification _____

Scope & Objective of the course: The course deals with the various physical and physicochemical properties, and principles involved in dosage forms/formulations. Theory and practical components of the subject help the student to get a better insight into various areas of formulation research and development, and stability studies of pharmaceutical dosage forms.

Upon the completion of the course student shall be able to

1. Understand various physicochemical properties of drug molecules in the designing the dosage forms
2. Know the principles of chemical kinetics & to use them for stability testing and determination of expiry date of formulations
3. Demonstrate use of physicochemical properties in the formulation development and evaluation of dosage forms.

Reading materials:

A. Text Books

Sl. No.	Name of the Text Book(s)	Author	Edition	Publisher	Accession No.	Rack No
1	Physical Pharmaceutics-I	C.V.S Subrahmanyam	2nd	Vallabh Prakashan	10939	17
2	Physical Pharmacy	S.P. Agarwal and Rajesh Khanna	2nd	CBS Publishers & Distributors	4591	03

B. Reference Books

Sl. No.	Name of the Text Book(s)	Author	Edition	Publisher	Accession No.	Rack No
1	Martin's Physical Pharmacy and Pharmaceutical Sciences	Patrick J. Sinko	6th	Lipincott Williams & Wilkins	5087	02

C. Journals / Website/Any other resources

Sl. No.	Name of the journal (s)/website/others	Source	Vol. no.	Month & Year
	NA			

Daily Teaching Schedule for UNIT-I

Sl. No.	Date	Day	Title to be covered	Teaching Pedagogy / T.L.P.	Suggested Knowledge Resources
1	30.07.2026	Thursday	Solubility expressions, mechanisms of solute solvent interactions	Power point presentation	A1, A2
2	31.07.2026	Friday	ideal solubility parameters, solvation & association	Power point presentation	A1, A2
3	06.08.2026	Thursday	quantitative approach to the factors influencing solubility of drugs, diffusion principles in biological systems.	Power point presentation	A1, A2
4	07.08.2026	Friday	Solubility of gas in liquids	Power point presentation	A1, A2
5	13.08.2026	Thursday	solubility of liquids in liquids, (Binary solutions, ideal solutions)	Power point presentation	A1, A2
6	14.08.2026	Friday	(Binary solutions, ideal solutions), solubility of gas in liquids	Power point presentation	A1, A2
7	20.08.2026	Thursday	Raoult's law, real solutions. Partially miscible liquids	Power point presentation	A1, A2
8	21.08.2026	Friday	(Binary solutions, ideal solutions) & diffusion principles in biological systems	Power point presentation	A1, A2
9	27.08.2026	Thursday	Critical solution temperature and applications.	Power point presentation	A1, A2
10	03.09.2026	Friday	Distribution law, its limitations and applications	Power point presentation	A1, A2
11	10.09.2026	Thursday	Distribution law, its limitations and applications	Power point presentation	A1, A2

Daily Teaching Schedule for UNIT-IV

Sl. No.	Date	Day	Title to be covered	Teaching Pedagogy / T.L.P.	Suggested Knowledge Resources
01	11.09.2026	Friday	Complexation and protein binding: Introduction, Classification of Complexation	Power point presentation	A1, A2
02	18.09.2026	Friday	Classification of Complexation, Applications	Power point presentation	A1, A2
03	24.09.2026	Thursday	methods of analysis	Power point presentation	A1, A2
04	25.09.2026	Friday	methods of analysis	Power point presentation	A1, A2
05	01.10.2026	Thursday	protein binding	Power point presentation	A1, A2
06	08.10.2026	Thursday	protein binding	Power point presentation	A1, A2
07	09.10.2026	Friday	Complexation and drug action	Power point presentation	A1, A2
08	29.10.2026	Thursday	crystalline structures of complexes	Power point presentation	A1, A2
09	30.10.2026	Friday	thermodynamic treatment of stability constants.	Power point presentation	A1, A2
11	05.11.2026	Thursday	Complexation and drug action, thermodynamic treatment of stability constants.	Power point presentation	A1, A2

Daily Teaching Schedule for UNIT-V

Sl. No.	Date	Day	Title to be covered	Teaching Pedagogy / T.L.P.	Suggested Knowledge Resources
01	06.11.2026	Friday	Sorensen's pH scale	Power point presentation	A1, A2, A3
02	13.11.2026	Friday	Buffers, applications of buffers	Power point presentation	A1, A2, A3
03	19.11.2026	Thursday	pH determination (electrometric and calorimetric)	Power point presentation	A1, A2, A3
04	20.11.2026	Friday	pH determination (electrometric and calorimetric)	Power point presentation	A1, A2, A3
05	26.11.2026	Thursday	buffers in pharmaceutical and biological systems	Power point presentation	A1, A2, A3
06	27.11.2026	Friday	Revision	Power point presentation	A1, A2, A3

Daily Teaching Schedule for Practical

Sl. No.	Date	Day	Title to be covered
1	03.08.2026	Monday	Determination of Surface tension of given solution using stalagmometer (Drop count method and Drop weight method) Group B
2	10.08.2026	Monday	Determination of CMC of surface active agent. Group B
3	17.08.2026	Monday	Determination of solubility of drug at room temperature. Group B
4	24.08.2026	Monday	Determination of CST and plot the mutual solubility curve of phenol-water system and component of phenol-water system. Group B
5	31.08.2026	Monday	Determination of effect of salt (NaCl) on the solubility of the phenol in water and the change in miscibility temperature Group B
6	07.09.2026	Monday	Determination of HLB of given surface active agent. Group B
7	14.09.2026	Monday	Determination of partition coefficient of benzoic acid in distilled water and benzene. Group-B
8	21.09.2026	Monday	Determination of partition coefficient of iodine in distilled water carbon tetrachloride. Group B
9	28.09.2026	Monday	Determination of stability constant and donor acceptor ratio of PABA-caffeine complex by solubility method. Group-B
10	05.10.2026	Monday	Determination of stability constant and donor-acceptor ratio of cupric-glycine complex by pH titration method Group B
11	12.10.2026	Monday	Determination of partition coefficient of iodine in distilled water carbon tetrachloride Group B
12	02.11.2026	Monday	Determination of stability constant and donor-acceptor ratio of cupric-glycine complex by pH titration method Group B
13	23.11.2026	Monday	Viva and revision
14	30.11.2026	Monday	Vivaa and revision

