JHARKHAND Rai University
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Lesson Plan & Tracking

Program : B. Pharm	**Session : 2021-2025**	**Year : 2nd**	**Semester: 3rd**
Course: Physical Pharmaceutics I Theory(BP 302T)			
Name of the Faculty: Disha Bhattacharya	**Commencement Date:**		**Date of Closure:**

Lecture No.	Week	Unit	Topics to be Covered	Blended Mode			Date	Duration	Tracking of Lectures	Related Course Outcome	Signature of Faculty	Signature of HoD	Remarks (if any)
				ICT Tool/Platform/ LMS	Resources	Activity							
1	1	UNIT 1	**Solubility of drugs:** Solubility expressions, mechanisms of solute solvent interactions, ideal solubility parameters										
2			Solvation & association, quantitative approach to the factors influencing drug solubility										
3			Diffusion principles in biological systems										
4			Solubility of gas in liquids										
5	2	UNIT 1	Solubility of liquids in liquids, (Binary solutions, ideal solutions)										
6			Partially miscible liquids										
7			Critical solution temperature and applications										
8			Raoult’s law, real solutions										
9		UNIT 1	Distribution law, its limitations										

10			Distribution law, and applications										
11	**3**	UNIT 2	**States of Matter and properties of matter:** State of matter, changes in the state of matter										
12			Latent heats, vapour pressure, sublimation critical point, eutectic mixtures										
13	**4**	UNIT 2	Gasesous state, aerosols– inhalers										
14			Relative humidity, liquid complexes, liquid crystals										
15			Glassy states, Solid crystalline structure										
16			Solid crystalline structure,Amorphous										
17	**5**	UNIT 2	Polymorphism.										
18			**Physicochemical properties of drug molecules:** Refractive index, optical rotation determination and applications										
19			Determination and applications of Dielectric constant, dipole moment										
20			Determination and applications of dissociation constant										
21	**6**	UNIT 3	**Surface and interfacial phenomenon:** Liquid interface, surface & interfacial tensions										
22			Measurement of surface & interfacial tensions										
23			Surface free energy,spreading coefficient										

24			Adsorption at liquid interfaces,HLB values										
25	**7**	UNIT 3	Surface active agents, HLB Scale										
26			Solubilisation, Detergency										
27			Adsorption at solid interface										
28			Adsorption at solid interface										
29	**8**	UNIT 4	**Complexation and protein binding:** Introduction										
30			Classification of Complexation										
31			Applications of Complexations and Protein Binding										
32			Methods of analysis, Protein binding										
33	**9**	UNIT 4	Complexation and drug action										
34			Crystalline structures of complexes										
35			Thermodynamic treatment of stability constants										
36			Thermodynamic treatment of stability constants										
37	**10**	UNIT 5	**pH, buffers and Isotonic solutions:** Sorensen's pH scale										
38			pH determination (electrometric and calorimetric)										
39			pH determination (electrometric and calorimetric)										
40			Buffer capacity										

41	**11**	UNIT 5	Buffers in Pharmaceutical and Biological systems										
42			Buffered isotonic solutions										
43			Applications of buffers, buffer equation										
44			REVISION										
45	**12**		REVISION										