LECTURES' OUTLINE : PHT 224 (Pharmaceutics I) – (2+1)

Week	Lecture number	Topic
1	1	Introduction
	2	Measurements and calculations
2	3	Prescription and calculation of doses
	4	Prescription and calculation of doses
3	5	Prescription and calculation of doses
	6	State of matter and solubility of gases
4	7	Solubility of liquids
	8	Solubility of solids
5	9	Distribution phenomenon
	10	Diffusion and dissolution
6	11	Rheological properties & viscosity
	12	Application of rheology in pharmacy
7	13	Introduction to surface phenomena
	14	Surface and interfacial tension
8	15	Spreading
	16	Adsorption
9	17	Surfactants
	18	Application of surfactants in pharmacy
10	19	Crystals and polymorphism
	20	Stability and reaction rate expression
11	21	Reaction order and half life
	22	Complex reactions
12	23	Storage and stability of solutions
	24	Stability of solids
13	25	Colligative properties
	26	Isotonic solutions & buffers
		2 Exams

LABORATORY PROJECTS' OUTLINE : PHT 224 (Pharmaceutics I)

Week	Topic	Description
1	Measurements and calculations	Use of prescription balance (weighing techniques) and aliquot method including percentage error and smallest weight calculation. Practice on calculations including reducing and enlarging formulae
2	Measurements and calculations	Weight systems, measurement of pharmaceutical liquids Practice on calculations including calculation of doses.
3	Measurements and calculations	Preparation of pharmaceutical solutions with practice on calculations in prescriptions including dilution, allegation alternate and percentage of solutions.
4	Measurements and calculations	Preparation of pharmaceutical solutions with practice on calculations in prescriptions including dilution, allegation alternate and percentage of solutions.
5	Cont.	Preparation of pharmaceutical solutions with practice on calculations in prescriptions including dilution, allegation alternate and percentage of solutions.
6	Diffusion and dissolution phenomena	Effect of particle size and temperature on the dissolution rate of solids.
7	Surface and interfacial tension	Determination of surface tension of liquids by different methods.Determination of the interfacial tension between two immiscible liquids.
8	Adsorption	Adsorption studies using Freundlich and Langmuir adsorption isotherm (e.g. adsorption of oxalic acid on charcoal).
9	Surfactants and application in pharmacy.	Determination of critical micelles concentration of surfactants and the effect of surfactants on the solubilization of sparingly soluble substances.
10	Reactions rate expression, reaction order and half life	Determination of the rate constants and half-life of the alkaline hydrolysis of p-nitrophenyl acetate in the presence of Tris

		buffer (pH 8.8 and concentration = 0.05).
11	Storage and drug stability	Effect of temperature and determination of the activation energy of the alkaline hydrolysis of p-nitrophenyl acetate in the presence of Tris buffer.
12	Storage and drug stability	Buffer catalysis of the alkaline hydrolysis of p-nitrophenyl acetate.
13	Colligative properties and Isotonic solutions	Collegative properties, applications, preparation of isotonic solutions and practice on solving problems.
14	Exam	

COURSE EVALUATION:

First midterm exam. Second midterm exam. Quizzes Performance (lab.) Final lab. exam.	15 15 5 5 20
Total	60
Final examination:	40
Total marks	100