

Form (H)
Short course description

Course title: Pharmaceutics- 1	Course number and code: PHT 221
Previous course requirement: PHT 210	Language of the course: English
Course level: Level 4	Effective hours: 3 (2+1)

Course description

وصف المقرر :

This course deals with preparation of fluid pharmaceutical dosage forms. It has been designed to help pharmacy student to understand the concepts of liquid dosage forms, types of these dosages (solutions and colloidal and coarse dispersions), methods of preparations, rationale of clinical uses, applications, advantages and drawbacks. Shelf life and factors affecting drug stability. The following main subjects are going to be covered: pharmaceutical solutions, pharmaceutical suspensions, pharmaceutical emulsions, colloidal systems, liposomal and nanoparticles preparations and aerosols. Drug stability and shelf life.

Course objectives

أهداف المقرر

- Provides the pharmacy student the basic principles related to solubility of materials, factors affecting solubility, and its applications in preparing pharmaceutical solutions
- Provides the pharmacy student the basic principles related to interfacial phenomena of materials, factors affecting this phenomena, and its applications in preparing pharmaceutical coarse dispersions (as drug delivery systems) such as suspensions and emulsions
- Provides the pharmacy student the basic principles related to colloidal dispersion systems and their applications in drug delivery.
- Provides a pharmacy student basic principles related to aerosols and their uses in drug delivery of drugs.
- Provides the pharmacy student the basic principles related to drug stability and factors affecting shelf life of pharmaceutical products

Learning outcomes (understanding, knowledge, and intellectual and scientific skills), after studying this course, the student is expected to be able to:

- Identify and describe the factors that influence the aqueous solubility and partition coefficient of a drug
- Understand and explain the ionization of weak acidic and weak basic drugs and calculate the fraction of a drug in its ionized and un-ionized forms as a function of pH.
- Describe how pKa and pH influence the observed solubility and partitioning of a drug.
- Identify, evaluate, and explain the factors that affect the chemical stability of a drug under various environmental and packaging conditions
- Identify and explain the factors that control the physical and microbiological stability of a drug product under various environmental and packaging conditions.
- Identify the various types of liquid, solid and semisolid dosage forms available.
- Discuss how physicochemical properties of a drug influence the design of various dosage forms
- Describe the role and functions of inactive/inert ingredients in solutions, and colloidal and coarse dispersions.
- Describe the various methods of compounding and/or manufacture of solutions, and colloidal and coarse dispersions.
- Identify and prevent drug interactions and incompatibilities based on presence of active and inactive pharmaceutical ingredients.
- Compound safe and effective extemporaneous pharmaceutical products.
- Apply relevant standards of practice (including ethical guidelines) to prepare safe and effective dosage forms and perform in-process quality control. Search and apply most accurate and standardized information on extemporaneous compounding.
- Evaluate the suitability of an extemporaneously compounded dosage form for the administration of a drug for a patient.
- Identify physical and chemical incompatibilities among active and inactive pharmaceutical ingredients of a formulation; recommend and follow approaches to avoid incompatibilities and unwanted interactions.
- Use good extemporaneous compounding practices in the preparation of a patient specific drug product.

Textbook adopted and supporting references

Title of the book	Author's name	Publisher's name	Date of publication
Remington, the science and practice of pharmacy	University of the Sciences in Philadelphia (Editor)	Lippincott Williams & Wilkins;	2011
Physical Pharmacy	Patrick J Sinko	Lippincott Williams & Wilkins; Sixth Edition	(February 1, 2010)