Kingdom of Saudi Arabia
Ministry of Education
Jazan University
College of Pharmacy

المملكه العربيه السعوديه
وزاره التعليم
جامعه جازان
كليه الصيدله

Pharmaceutics-II
Title: Pharmaceutics-II
Subject Code: 312 PHT
Semester: Fifth Semester (Third Year).
Duration: 2 + 1 Units (4 contact hours) per week.
Aims: This course is designed to impart a fundamental knowledge of physical pharmacy, reaction kinetics and stability.
Objectives: Upon Successful completion of this course the student should be able to demonstrate the properties of drug molecules, rheology, reaction kinetics and drug stability.
Contents: **Lectures:** • **Matter, Properties of Matter**: State of matter, change in the state of matter, latent heats and vapour pressure, sublimation critical point, Eutectic mixtures, gases, aerosols-inhalers, relative humidity, liquid complexes, liquid crystals, glassy state, solids crystalline, amorphous and polymorphism. • **Solubility and Distribution Phenomenon**: solute – solvent interactions, solubility of gases in liquids, solubility of liquids in liquids, solubility of solids in liquids, factors affecting solubility. • **Buffers:** Buffers equations and buffer capacity in general buffers in pharmaceutical systems, preparation, stability buffered isotonic solutions measurements of tonicity, calculations and methods of adjusting isotonicity • **Rheology:** Fundamentals of rheology- Introduction, types of flow, quantitative

measurement of flow, mechanical models to illustrate viscoelasticity, thixotropy, measurement of thixotropy, thixotropy in formulations, rheology of disperse systems, application of rheology to pharmacy. Methods of measuring viscosity.

- **Kinetic and Drug Stability:** Rates and orders of reactions, influence of temperature and other factors on reaction rates, decomposition and stabilization of medicinal agents, accelerated stability analysis.

Practical: Experiments based on above mentioned theory topics, like adsorption, viscosity, surface tension, partition coefficient, reaction kinetics and determination of reaction rate constants.

Minimum course requirements: 30 (2 x 15) Unit lectures and 30 practical hours (2 x 15) per level.

Evaluation methods:

-Quizzes	10%
- Mid term examination	25%
- Practical examinations	25%
- Final examination (written)	40%

Text Books (latest edition):

1- Physical Pharmacy, Alfered Martin, Williams and Wilkins.

Recommended books (latest editions):

1. Physical Pharmacy: Physical chemical Principles in the Pharmaceutical
2. Sciences, Martin AN, Lea and Febiger.
3. Drug Stability: Principles and Practices, Jens T. Carstensen, Marcel
4. Dekker Inc.

5. A.T. Florence and D. Attwood W: Physiochemical principles of Pharmacy.

6. Shotton and Ridgeway: Physical Pharmaceutics.

7. Remingtons Pharmaceutical Sciences, Mark Publishing Co.

8. H.S. Beans, A.H. Beckett and J.E. Carless: Advances in Pharmaceutical Sciences, Vol. 1 to 4.

9. S.P.Agarwal, Rajesh Khanna: Physical Pharmacy, CBS Publishers, New Delhi.