Jerash University
Faculty of Pharmacy

20xx/20xx

Course Syllabus

Course Title: Pharmaceutics 1	**Course code: 1101321**
Course Level: 3d	**Course prerequisite** : Physical pharmacy
Lecture Time:	**Credit hours: 3 hours**

Academic Staff Specifics

Name	Rank	Office Number and Location	Office Hours	E-mail Address
Dr. Shadi Gharaibeh	**Asst. Prof.**	**409**	**TBA**	**TBA**

Module description:

At this level, the student will be familiar with the basics of solutions dosage form, Students apply that knowledge to the pharmaceutical dosage forms and will be introduced to coarse and colloidal dispersions.

.**Module objectives:**

The coarse aims at:

1. Defining and understanding the concepts of rheology and describing its applications in pharmaceutical sciences and practice in pharmacy
2. Understanding the phase rule and its applications to different systems containing multiple components
3. Understanding the different types of interfaces, the term suface tension and interfacial tension and the mechanism of adsorption at interfaces. Classifying the surface active agents and appreciating their application in pharmacy
4. Differentiating between different types of colloids and understanding their optical , kinetic and electrical properties which are important in the stabilization of colloidal systems

5. Understanding the concepts of pharmaceutical suspensions and emulsions, factors that affect their stability and describing approaches used in preparing physically stable formulations
6. Familiarizing students with semisolid dosage forms and transdermal formulations , their types , properties , preparation , mechanism of action and applications

Teaching methods:

Lectures (interactive; group discussion)

Learning outcomes:

At the end of this module, student will be able to:

1. Define and explain the rational of each dosage form.
2. Understand the physicochemical properties of each dosage form.
3. Explain and illustrate the various materials used in formulation of each dosage form.
4. Understand and practice the different methods of compounding of each dosage form.
5. To develop knowledge of the fundamental physicochemical properties of drugs and asses their role and applications in solution dosage forms.
6. To be able to carry out calculations that is vital in pharmacy such as: pH, solubility, concentration, .etc.

Assessment instruments

- Short reports and/ or presentations, and/ or Short research projects
- Quizzes.
- Home works
- Final examination: 40 marks

Allocation of Marks	
Assessment Instruments	**Mark**
First examination	**20%**
Second examination	**20%**
Final examination: 50 marks	**40%**
Reports, research projects, Quizzes, Home works, Projects	**20%**
Total	**100%**

Course/module academic calendar

week	Basic and support material to be covered
(1-2)	1-Rheology: a) Newtonian fluids b) Non-Newtonian fluids c) Thixotropy d) Determination of rheologic properties e) Application to pharmacy
(3-5)	2- Interfacial Phenomena a) Liquid interfaces b) Adsorption at liquid interfaces c) Adsorption at solid interfaces d) Application of surface active agent e) Electric properties of interfaces
(6-8)	3-Colloidal Dispersion a) Types of colloidal systems b) Properties of colloids c) Stabilization of colloids
(9-11)	3- Coarse Dispersion a) Formulation of suspensions and emulsions b) Pharmaceutical applications of suspensions and emulsions c) Physical stability of emulsions and formulation
(12-15)	4- Semisolid dosage forms and transdermal drug delivery a) Structure, function and topical treatment of skin b) Drug transport throughout skin c) Ointments, creams, gels and other preparations d) Formualtion of dermatological vehicles

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Module references:

Text book:

1. Martin's Physical Pharmacy and Pharmaceutical Sciences By : Patrick J. Sinko**,** Lippincott Williams & Wilkins , 2011, 6th Edition

2. **Aulton's Pharmaceutics The Design and Manufacture of Medicines**, Edit.: Michael E. Aulton & Kevin M. G. Taylor, Pub.: Churchill Livingstone, 4th edition, 2013.

3. Ansel's Pharmaceutical Dosage Forms and Drug Delivery Systems by Loyd V. Allen, Jr. & Howard C. Ansel, Lippincott Williams & Wilkins 10th Edition ,2014

In addition to the above, the students will be provided with handouts by the lecturer.