



**Jerash University
Faculty of Pharmacy**

20xx/20xx

Course Syllabus

Course Title: Physical pharmacy	Course code: 1101219
Course Level: 2nd	Course prerequisite : general physics (1)
Lecture Time: TBA	Credit hours: 2 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 pharmacy like solubility, dissolution, types of solution etc.... Students apply that knowledge to the pharmaceutical dosage forms regarding their physicochemical aspects, simple formulation, compounding, procedures and different dosage units. Detailed examples and applications are given at the end of each chapter.

.Module objectives:

The aim of this course is to provide the student with basic knowledge and understanding of the different pharmaceutical dosage forms. It relates the basic scientific background to pharmaceutical practice regarding the dosage form included. Part of the dosage forms will be given in this course and others will be taught in other pharmaceuticals courses

Teaching methods:

Lectures (interactive; group discussion)

Learning outcomes:

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

1. Define and explain the rationale 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 assess 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

<u>Allocation of Marks</u>	
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)	<ul style="list-style-type: none">▪ States of matter▪ Phase diagram
(3)	<ol style="list-style-type: none">1. Solutions of non-electrolytes<ul style="list-style-type: none">▪ Ideal and real solutionsHenry's lawRaults law
(4)	<ol style="list-style-type: none">2. Solutions of electrolytes Theory of strong electrolytes

(5-6)	<p>3. Ionic equilibria: pH of solutions</p> <ul style="list-style-type: none"> ▪ Modern theory of acids, bases, and salts ▪ Acid-base equilibrium ▪ Sorensen's pH scale ▪ Calculation of pH <p>Acidity constants</p>
(7-8)	<p>4. Solubility and distribution phenomena</p> <ul style="list-style-type: none"> ▪ General principles ▪ Solvent-solute interaction ▪ Solubility of gases in liquids ▪ Solubility of liquids in liquids ▪ Solubility of solids in liquids ▪ Distribution of solutes between miscible solvents
(9-10)	<p>5. Pharmaceutical solutions</p> <ul style="list-style-type: none"> ▪ Introduction ▪ Solvents and vehicles ▪ Preparation of solutions ▪ Formulation considerations ▪ Oral solutions ▪ Syrups ▪ Elixirs ▪ Tinctures
(11-12)	<p>6. Other types of solution preparations</p> <ul style="list-style-type: none"> ▪ Nasal solutions ▪ Otic solutions ▪ Topical solutions ▪ Vaginal & Rectal)
(13-15)	<p>7. Ophthalmic solutions, isotonicity calculation,</p> <ul style="list-style-type: none"> • Pharmaceutical requirements • Packaging ophthalmics • Proper administration • Contact lens and care and use solutions

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.