Philadelphia University
Faculty of Pharmacy
Department of Pharmaceutical Sciences
Second Semester of academic year 2017/2018

Course syllabus

Course title: Pharmaceutics 1 practical	**Course code:**0510322
Course level:3rd year	**Course prerequisite (s) and/or corequisite (s):** physical pharmacy (0510219)
Lecture time: Sun 8:10-10:00, 11:10-13:00 Mon 11:15-13:15 Tues: 13:10-15:0 Wed: 8:15-10:15, 14:15-16:00 Thurs: 13:10-15:00	**Credit hours**:1 hour
Location:535	

Academic Staff Specifics

Name	Rank	Office number and location	Office hours	E-mail address
Amani Al Shaer	**Lab supervisor**	**616, 2359**	**Sun:3-4** **Mon: 10-11** **Tues: 12-1** **Wed: 12-1** **Thurs: 11-12**	aalshaer@philadelphia.edu.jo

Course description

At this level, the student will be familiar with the basics of practical topics in phase diagrams, reaction order, Arrhenius plot, diffusion, surface tension, pharmaceutical measurements, prescription handling, and preparation of syrups and oral solutions. This knowledge is important to understand the pharmaceutical dosage forms regarding their physicochemical aspects, simple formulation, compounding, and procedures. Detailed examples and applications are given at the end of each experiment.

Course objectives:

The aim of this course is to provide the student with basic knowledge and understanding of the phase rule and its applications to different systems, the term surface tension and interfacial tension, classifying the surface active agents and appreciating their application in pharmacy. Also, it provides basic knowledge in orders of reactions and its effect degradation of the drug including the effect of temperature. Diffusion is also tested and the students learn its relevant calculations.

Furthermore, the prescription handling including symbols used in writing the prescription, types of dosage forms, containers, measurements, storage conditions, and labeling are discussed with the students during the course.

Course/ resources

- **Text book/ books (title , author (s), publisher, year of publication)**

  1. Martin's Physical Pharmacy and Pharmaceutical Sciences By : Patrick J. Sinko**,** Lippincott Williams & Wilkins , 2006, 5th Edition
  2. Pharmaceutical Dosage Forms and Drug Delivery Systems
  by Loyd V. Allen, Jr., Nicolas G. Popovich & Howard C. Ansel, Lippincott Williams & Wilkins 8th Edition ,2005
  3. Pharmaceutical Dosage Forms and Drug Delivery Systems
  by Loyd V. Allen, Jr., Nicolas G. Popovich & Howard C. Ansel, Lippincott Williams & Wilkins 8th Edition ,2005
  In addition to the above, the students will be provided with handouts by the lecturer

- **Laboratory Handbook/ books (when applicable)**
  Pharmaceutics (1) laboratory manual

Teaching methods
Laboratory sessions and experimental works (interactive; group work)

Learning outcomes:

- Knowledge and understanding
  - Understand the order, rate and effect of temperature on the chemical reactions.
  - Understand the diffusion of compounds across membranes.
  - Understand the surface tension.
  - Introduce them to pharmaceutics and prescription handling.
  - Ability to prepare solutions and syrups

- Cognitive skills (thinking and analysis).

Students develop the ability to make observations, record data and analyze results

- Communication skills (personal and academic)
- Access resources for analytical and pharmaceutical quality requirements in both printed and electronic formats.
- Writing reports representing data clearly.
- Explaining problems and corresponding solutions.
- Students will develop the ability for group discussions and critical thinking

- Transferable Skills.

- Use pharmaceutical techniques to calculate and find correct answers to given

- Solve simple problems in compounding and despising.
- Use pharmacopeia and references guidelines to develop processes, procedures, to produce pharmaceuticals of appropriate quality and quality assures them.
- Read, evaluate, and interpret numerical, chemical and general scientific information.
- Formulate significant research questions, design experiments, use appropriate chemical instrumentation, and analyze and interpret data.
- Search and use the chemical literature in both printed and electronic formats.

Assessment instruments

- Exams (First, Second and Final Exams)
- Quizzes.
- Short reports and/ or presentations, and/ or Short research projects
- Homework assignments

Allocation of Marks	
Assessment Instruments	**Mark**
Quizzes	**20**
Reports	**30**
Home work	**10**
Final exam	**40**
Total	**100**

Documentation and academic honesty

- Documentation style (with illustrative examples)

Whenever applicable, students should conduct their assignments themselves whether individually or in a group work referencing all information, data, figures and diagrams taken from literature. The references should be given according to the acceptable format.

- Protection by copyright

Students should realize that some published information or data are the property of their authors and they are not allowed to use it without asking permission from the originators.

- Avoiding plagiarism.

Plagiarism is the unauthorized use or close imitation of the language and thoughts of another author and the representation of them as one's own original work, without proper acknowledgment of the author or the source. Students must pursue their studies honestly and ethically in accordance with the academic regulations. Cheating in exams and plagiarism are totally unacceptable and those who, intentionally, commit such acts would be subjected for penalties according to the University regulations.

Course/ academic calendar

week	Basic and support material to be covered	Homework/reports and their due dates
25/2-1/3/2018	Safety rules	
4-8/3/2018	Phase diagram of binary system	Lab report Due date: week 3
11-15/3/2018	Rate and order of reaction	Lab report Due date: week 4
18-22/3/2018	Effect of temperature on reaction rate	Lab report Due date: week 5
25-29/3/2018	Diffusion across polymeric membrane	Lab report Due date: week 6
1-5/4/2018	First exam	
8-12/4/2018	Surface tension and Critical micelle concentration	Lab report Due date: week 8
15-19/4/2018	Introduction to pharmaceutics and handling of prescription	Lab report Due date: week 9
22-26/4/2018	Pharmaceutical measurements	Lab report Due date: week 10
29/4-3/5/2018	Syrups	Lab report Due date: week 11
6-10/5/2018	Second exam	
13-17/5/2018	Oral solution	Lab report Due date: week 13
20-24/5/2018	Enthalpy change of solution	Lab report Due date: week 13
27-31/5/2018	Final exam	

Expected workload:
On average students need to spend 3 hours of study and preparation for each 120 minute lab session.

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.

Other Education Resources

Books

1.Physical Pharmacy: Physical Chemical Principles in the Pharmaceutical Sciences
by Alfred Martin, Pilar Bustamante, A.H.C. Chun (Illustrator)
622 pages 4th edition (January 15, 1993), Lea &Febiger; ISBN: 0812114388

2. Pharmaceutical Dosage Forms and Drug Delivery Systems
by Loyd V. Allen, Jr., Nicolas G. Popovich & Howard C. Ansel, Lippincott Williams & Wilkins 8th Edition ,2005

3. Pharmaceutics The Science of Dosage Form Design, Edit.: Michael E. Aulton, Pub.: Churchill Livingstone, 2nd edition, 2002.

4. Merck Index: An Encyclopedia of Chemicals, Drugs, & Biologicals
by Merck, Co, Maryadele J. Oneil (Editor), Ann Smith (Editor) 13th edition (October 2001), Merck & Co; ISBN: 0911910131

5. Remington: The Science and Practice of Pharmacy
by Alfonso R. Gennaro (Editor) 20th edition (December 15, 2000), Lippincott, Williams & Wilkins; ISBN: 0683306472

Websites

http://www.philadelphia.edu.jo/pharmacy/resources.html