In the name of GOD

Department of

School of pharmacy

Course title: Physical pharmacy 1

Credit(Theory or Practical): 2(theory)

Prerequisite: pharmaceutical mathematics, pharmaceutics 1

First Semester: Sep 2023

Course Instructors: Dr. Mohammadi,. Dr. Rastegari, Dr. Diabaii, Dr Abootaleb

Responsible Instructor: Dr. Mohammadi

Student responsibilities*:*

- The students are responsible to be present in the class and perform the class projects or home works.

Course Description:

- Course objectives:

- Familiarity with the basic principles of physical pharmacy in the manufacture of drugs
- Familiarity with the physical principles of interfering in the manufacture and dissolution of drugs

Student Learning Objectives:

1- Familiarity with the concept of thermodynamics and its application in pharmacy
2- Familiarity with different states of materials and the laws governing them
3- Familiarity with the principles of preparing buffer solutions and adjusting the tonicity.
4- Familiarity with the principles and laws of dissolution
5- Familiarity with electrolyte and non-electrolyte solutions and their applications

Students are expected to:

- The student is expected to be present in the classroom continuously.
- The student is expected to Familiarity with the concept of thermodynamics and its application in pharmacy.
- The student is expected toFamiliarity with different states of materials and the laws governing them
- The student is expected to Familiarity with the principles of preparing buffer solutions and adjusting the tonicity.
- The student is expected to Familiarity with the principles and laws of dissolution

The student is expected toFamiliarity with electrolyte and non-electrolyte solutions and their applications.

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Student assessment:

1-Attendance, class works and home works: ٢٠ %

٢-Final exam: ٨٠%

References:

1- Martin's Physical Pharmacy and Pharmaceutical Sciences, Patrick J. Sinko, latest edition

2- Aulton's Pharmaceutics: The Design and Manufacture of Medicines, Michael E. Aulton BPharm PhD, Kevin M.G. Taylor BPharm PhD, latest edition

	subject	Professor	Date	Time
1	Thermodynamic: the first law, reversible processes, maximum work, isothermal and adiabatic processes	Dr Mahdi Ansari	1 Oct	13-15
2	Thermodynamic: the second law, heat engine, entropy and disorder And the third law, Gibbs free energy	Dr Mahdi Ansari	8 Oct	13-15
3	The states of mater (1)	Dr Mahdi Ansari	15 Oct	13-15
4	The states of mater (2)	Dr Mahdi Ansari	22 Oct	13-15
5	Gases, Liquids and aerosols	Dr Mahdi Ansari	29 Oct	13-15
6	Isotonic solutions (1)	Dr. Zohreh Mohammadi	5 Nov	13-15
7	Isotonic solutions (2)	Dr. Zohreh Mohammadi	12 Nov	13-15
8	The phase rule	Dr. Zohreh Mohammadi	19 Nov	9-11
9	buffers	Dr. Zohreh Mohammadi	26 Nov	12-13
10	Solids and crystals, Liquid crystals and supercritical fluids	Dr Ali Rastegari	3 Dec	13-15
11	Solubility(1): principles and equations	Dr Ali Rastegari	10Dec	13-15
12	Solubility(2): principles and equations-continue	Dr Ali Rastegari	24 Dec	13-15
13	Chemical kinetics and stability	Dr Ali Rastegari	31 Dec	13-15