

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 2024

Course Instructors: Dr. Mohammadi, Dr. Rastegari, Dr. Kiani

Responsible Instructor: Dr. Rastegari

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 to Familiarity 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 to Familiarity with electrolyte and non-electrolyte solutions and their applications.
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Student assessment:

1-Attendance, class works and home works: ٧٠ %

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 Kiani	۷/۱۶	8-10
2	Thermodynamic: the second law, heat engine, entropy and disorder And the third law, Gibbs free energy	Dr Kiani	۷/۲۳	8-10
3	The states of mater (1)	Dr Kiani	۷/۳۰	8-10
4	The states of mater (2)	Dr Kiani	۸/۷	8-10
5	Gases, Liquids and aerosols	Dr Kiani	۸/۱۴	8-10
۶	Solids and crystals, Liquid crystals and supercritical fluids	Dr Ali Rastegari	۸/۲۱	8-10
۷	Solubility(1): principles and equations	Dr Ali Rastegari	۸/۲۸	8-10
۸	Solubility(2): principles and equations-continue	Dr Ali Rastegari	۹/۵	8-10
۹	Chemical kinetics and stability	Dr Ali Rastegari	۹/۱۲	8-10
۱۰	Isotonic solutions (1)	Dr. Zohreh Mohammadi	۹/۱۹	8-10
۱۱	Isotonic solutions (2)	Dr. Zohreh Mohammadi	۹/۲۴	8-10
۱۲	The phase rule	Dr. Zohreh Mohammadi	10/3	8-10
۱۳	Buffers	Dr. Zohreh Mohammadi	۱۰/۱۷	8-10