

Al-Zahrawi University _ College of Pharmacy_ Department of Pharmaceutics
Course Description for **Physical Pharmacy II**

This course description summarizes the key characteristics and anticipated learning objectives for students, assessing their utilization of available learning resources, and must be aligned with the program description.

1. Educational Institution	Al-Zahrawi University
2. University Department / Center	College of Pharmacy -Department of Pharmaceutics
3. Course Name / Code	Physical Pharmacy II
4. Programs in which it is included	Bachelor of Pharmacy
5. Available Forms of Attendance	Daily Attendance
6. Semester / Year	Second Semester, Second Stage (2025-2026)
7. Total Number of Study Hours	Total 45 hours_3 hours per week for each group
8. Date of preparing this description	2025-2026
9. Course Objectives: Students should be able to understand drugs complexes in pharmacy, chemical kinetics and interfacial phenomena ,rheology, colloids, polymer science and their applications in pharmacy.	
Learning Outcomes, Teaching and Learning Methods, and Evaluation	

A. Knowledge and Understanding

- A.1: Students will be able to understand complexes in pharmacy.
- A.2: Students will be able to understand drugs kinetics and stability.
- A.3: Students learn interfacial phenomena.
- A.4: Students learn rheological properties of matter under different kinds of pressure.
- A.5: Students learn different types of polymers and their applications in pharmacy.

B. Subject-Specific Skills

- B.1: Enable students to solve mathematical equations related to physical pharmacy.
- B.2: Enable students to read and interpret plots related to physical pharmacy topics.
- B.3: Enable students to be independent learners.

Teaching and Learning Methods

- 1. Use of smart screen.
- 2. Teaching through lectures mode.
- 3. Seminars and posters.

C. Evaluation Methods

- 1. Mid-term and final exams.
- 2. Written and oral tests.
- 3. Seminars and posters.

D. Thinking Skills

- D1. Encourage students to think correctly through analysis of principles.
- D2. Enable students to correctly handle physical and chemical characteristics of matter.

E. General and Transferable Skills

- D1. Encourage students to give research articles.
- D 2. Encourage students to discuss scientific reports.
- D 3. Learn skills necessary to handle materials
- D 4. Learn leadership skills.
- D 5. Learn skills is necessary to obtain information related to physical pharmacy.

11. Course Structure					
Weeks	Hours	Required Learning Outcomes	Unit Name / Course or Topic	Learning Methods	Evaluation Method
1	3	Knowledge	Complexes	Smart Screen Presentations	Daily exam and oral questions
2	3	Knowledge	Complexes	Smart Screen Presentations	Daily exam and oral questions
3	3	Knowledge	Diffusion Phenomena	Smart Screen Presentations	Daily exam and oral questions
4	3	Knowledge	Diffusion Phenomena	Smart Screen Presentations	Daily exam and oral questions
5	3	Knowledge	Chemical kinetics and stability	Smart Screen Presentations	Daily exam and oral questions
6	3	Knowledge	Chemical kinetics and stability	Smart Screen Presentations	Daily exam and oral questions
7	3	Knowledge	Interfacial phenomena	Smart Screen Presentations	Daily exam and oral questions
8	3	Knowledge	Interfacial phenomena	Smart Screen Presentations	Daily exam and oral questions
9	3	Knowledge	Rheology	Smart Screen Presentations	Daily exam and oral questions
10	3	Knowledge	Rheology	Smart Screen Presentations	Daily exam and oral questions
11	3	Knowledge	Colloidal dispersions	Smart Screen Presentations	Daily exam and oral questions
12	3	Knowledge	Colloidal dispersions	Smart Screen Presentations	Daily exam and oral questions

13	3	Knowledge	Micromeritics	Smart Screen Presentations	Daily exam and oral questions
14	3	Knowledge	Micromeritics	Smart Screen Presentations	Daily exam and oral questions
15	3	Knowledge	Polymers	Smart Screen Presentations	Daily exam and oral questions

12. Infrastructure	
Required Readings:	1-Ministry of Higher Education Reference 2-Martin's Physical Pharmacy and Pharmaceutical Sciences; 7th edition; 2017. 3-Aulton's Pharmaceutics; The Design and Manufacture of Medicines; 6th edition, 2022 .
Special Requirements (Workshops, Journals, Software, Websites):	Electronic Websites: None
Social Services (Guest Lectures, Professional Training, Field Studies, Others)	Organizing workshops and courses for graduates: None

13. Admission:	
Prerequisites	Admission according to the central plan
Minimum Number of Students	Admission according to the central plan
Maximum Number of Students	Admission according to the central plan

Name of the Instructor: Ammar Sahib Abdulameer, Ph.D.