



Course Description For Industrial Pharmacy- Practical - Fourth Stages

Performance review of higher education institution (assessment of the academic program)

Course Description

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	Ministry of Higher Education and Scientific Research / Al-Zahrawi University
2. University Department / Center	College of Pharmacy
3. Course Name / Code	Industrial Pharmacy Practical - Fourth Stages PPCT48
4. Programs in which it is included	Bachelor of Pharmaceutical Sciences
5. Available Forms of Attendance	Daily attendance
6. Semester / Year	Second Semester / Fourth year
7. Total Number of Study Hours	30 hours per Course
8. Date of preparing this description	2025-2026
٩. Course Objectives: 1-Establishing the foundations and concepts of industrial pharmacy and pharmaceutical manufacturing for fourth-year students 2- Identifying the raw materials and equipment used in drug manufacturing 3- Emphasizing the importance of the pharmaceutical manufacturing process and its major role in creating appropriate and effective pharmaceutical forms	

10. Learning Outcomes, Teaching and Learning Methods, and Evaluation:

A. Knowledge and Understanding

- 1- The student should be familiar with the basic concepts of industrial pharmacy.
- 2- The student should be familiar with the skills that must be acquired in the field of work, such as manufacturing and marketing medicines.
- 3- The student should be familiar with the most important pharmaceutical forms.
- 4- The student should be familiar with the importance of the pharmaceutical synthesis process.

Subject-Specific Skill

1. Teaching skill in the specialty subject.
2. The student should have knowledge of the additives that should be used to produce pharmaceutical forms in addition to the active ingredient.
3. The student should have the ability to identify and solve obstacles and problems that may occur in the pharmaceutical manufacturing process

A. Thinking Skills

1. Encourage students to find problems related to the focus of the study
2. Encourage students to find solutions to those problems
3. Conduct experiments individually and collectively.
4. Compare results and explore errors

C. Teaching and Learning Methods

- 1 Explaining the concepts theoretically and applying them practically
2. Discussion and dialogue method.
3. Troubleshooting and correcting them.
4. Study circles

D. Evaluation methods

1. Submit weekly reports and work in the laboratory.
2. Oral assessment and practical performance evaluation.
3. Written tests

D. General and Transferable Skills

1. The student should be able to think logically to solve problems
2. The student should acquire manual work skills
3. The student should acquire development and creativity skills

11. Course Structure / 4 TH STAGE/ 2 ND semester					
Wee ks	Ho urs	Required Learning Outcomes	Unit Name / Course or Topic	Learning Methods	Evaluatio n Method
1	2	Knowledge	Mixing of pharmaceutical materials, solid-solid mixing liquid-liquid mixing, solid-liquid mixing	whiteboard and PowerPoint Presentations	Daily Exam and Oral Questions
2	2	Knowledge	Mixing of pharmaceutical materials, solid-solid mixing liquid-liquid mixing, solid-liquid mixing	whiteboard and PowerPoint Presentations	Daily Exam and Oral Questions
3	2	Knowledge	Rheology- Angle of repose, Carr's index and Hausner ratio	whiteboard and PowerPoint Presentations	Daily Exam and Oral Questions
4	2	Knowledge	Rheology- Angle of repose, Carr's index and Hausner ratio	whiteboard and PowerPoint Presentations	Daily Exam and Oral Questions
5	2	Knowledge	Powder density- Tapping density	whiteboard and PowerPoint Presentations	Daily Exam and Oral Questions
6	2	Knowledge	Particle size analysis- Sieving method	whiteboard and PowerPoint Presentations	Daily Exam and Oral Questions
7	2	Knowledge	Particle size analysis- Sieving method	whiteboard and PowerPoint Presentations	Daily Exam and Oral Questions
8	2	Knowledge	Effervescent granules –fusion method	whiteboard and PowerPoint Presentations	Daily Exam and Oral Questions
9	2	Knowledge	Effervescent granules –fusion method	whiteboard and PowerPoint Presentations	Daily Exam and Oral Questions

10	2	Knowledge	Effervescent granules- wet method	whiteboard and PowerPoint Presentations	Daily Exam and Oral Questions
11	2	Knowledge	Effervescent granules- wet method	whiteboard and PowerPoint Presentations	Daily Exam and Oral Questions
12	2	Knowledge	Drying- Moisture content calculation- preparing granules by the wet method- then weighing the powders in different periods with application of the MC% law	whiteboard and PowerPoint Presentations	Daily Exam and Oral Questions
13	2	Knowledge	Drying- Moisture content calculation- preparing granules by the wet method- then weighing the powders in different periods with application of the MC% law	whiteboard and PowerPoint Presentations	Daily Exam and Oral Questions
14	2	Knowledge	Filtration or clarification (Dialysis membrane and or Büchner funnel)	whiteboard and PowerPoint Presentations	Daily Exam and Oral Questions
15	2	Knowledge	Filtration or clarification (Dialysis membrane and or Büchner funnel)	whiteboard and PowerPoint Presentations	Daily Exam and Oral Questions

11. Infrastructure

Required Readings:	1) Aulton's Pharmaceutics; The Design and Manufacture of Medicines; 6th edition, 2022. 2) Pharmaceutical Dosage Forms and Drug Delivery Systems by Howard A. Ansel; 11th edition, 2017. 3) Scientific journal and papers related to industrial pharmacy
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Special Requirements (Workshops, Journals, Software, Websites):	Electronic Websites: google https://youtu.be/NF1kzeHoQ6w https://youtu.be/k-3DoyKy0zE
Social Services (Guest Lectures, Professional Training, Field Studies, Others)	Laboratory contribution to students' graduation research

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

Name of the Instructor:

Assistant lecturer

Attaa Sattar Dawood