Course Description Form

1. Course Name:

Industrial Pharmacy II (Theoretical+ Practical)

2. Course Code:

Phind23 515--

3. Semester / Year:

1st Semester/5th year

4. Description Preparation Date:

25/03/2024

5. Available Attendance Forms:

Students' signature on attendance sheet

6. Number of Credit Hours (Total) / Number of Units (Total)

3 hours Theoretical + 2 hours Practical (75) /4 units

7. Course administrator's name

Theoretical

Name: Assist. Prof. Dr. Mohanad Alfahad
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Name: Lec. Dr. Thamer Abduljabbar Omar
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Practical

Name: Assist. Lecturer: Mohmmed Khalid Al-Shaheen
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8. Course Objectives

Course Objectives

In this course, student will be introduced to an overview of the pre-formulation studies and the drug manufacturing process. Student will review the main steps involved in making a drug product. Different types of drug products will be discussed (we will mainly focus on tablets). Subsequently, the main tools used to examine manufacturing processes and to identify important material properties, process parameters, and product attributes will be discussed.

9. Teaching and Learning Strategies

Strategy	Lecturing Homework Quiz Practical laboratory demonstrations, oral exam and practical tests

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	3+2	Understanding the basic principles and equipment	Pre-formulation Studies	Theoretical lectures	Paper-based exams

		involved in pre-formulation studies.		Laboratory demonstration	
2	3+2	Understanding the basic principles and equipment involved in pre-formulation studies.	Pre-formulation Studies	Theoretical lectures Laboratory demonstration	Paper-based exams
3	3+2	Exploring the benefits and drawbacks of tablets and identifying the various types of tablets.	Tablets: advantages and disadvantages, and classification	Theoretical lectures Laboratory demonstration	Paper-based exams
4	3+2	Students will become aware of the different kinds of pharmaceutical ingredients and their multiple uses to achieve a product performance objective.	Tablet excipients	Theoretical lectures Laboratory demonstration	Paper-based exams
5	3+2	Students will be familiar with the different steps and different equipment required to manufacture tablets.	Methods of Tablet Manufacturing	Theoretical lectures Laboratory experiments	Paper-based exams
6	3+2	Students will be familiar with the different steps and different equipment required to manufacture tablets.	Methods of Tablet Manufacturing	Theoretical lectures Laboratory demonstration	Paper-based exams
7	3+2	Identifying the different types of tablet coating and reviewing various coating equipment	Tablet Coating	Theoretical lectures Laboratory demonstration	Paper-based exams
8	**Mid-term exam**				
9	3+2	Comprehending the main tablet properties and methods used to test product properties	In vitro Evaluation of Tablets	Theoretical lectures Laboratory demonstration	Paper-based exams
10	3+2	Reviewing the main tablet problems and how can we address these problems	Tablet Problems	Theoretical lectures Laboratory demonstration	Paper-based exams
11	3+2	Acquiring knowledge of the several categories of modified released tablets. Examining	Modified release tablets	Theoretical lectures	Paper-based exams

		several methodologies for manufacturing these tablets and analyzing their release profiles.		Laboratory demonstration	
12	3+2	Acquiring knowledge of the several categories of modified released tablets. Examining several methodologies for manufacturing these tablets and analyzing their release profiles.	Modified release tablets	Theoretical lectures Laboratory demonstration	Paper-based exams
13	3+2	The student will gain knowledge regarding the microencapsulation method and its application in the field of pharmaceutical manufacturing	Microencapsulation	Theoretical lectures Laboratory demonstration	Paper-based exams
14	3+2	Learning about the different materials and diverse processing equipment utilized in the production of aerosol.	Aerosols	Theoretical lectures Laboratory demonstration	Paper-based exams
15	**Course Review**				

11. Course Evaluation

- 20 M Theoretical assessment;
  (paper-based mid-term exam + quiz + attendance)
- 20 M practical assessment (attendance + quiz + practice+ reports)
- 60 M paper-based theoretical final exam

100 M total

12. Learning and Teaching Resources

Required textbooks	Lachman L., Liberman H. and Kanig J.; The Theory and Practice of Industrial Pharmacy; Third Edition
Main references (sources)	• Lachman L., Liberman L. and Schwartz J. Pharmaceutical Dosage Forms: Tablets; Second Edition: Volume I. • Aulton M.; Pharmaceutics: The Science of Dosage Form Design; International Student Edition. • Ansel H., Allen L. and Jr. Popovich N.; Ansel's Pharmaceutical Dosage Forms and Drug Delivery Systems; Eighth Edition.
Electronic References, Websites	