

Department	Pharmacy
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Course Name	Industrial Pharmacy Lab	Course No.	
Prerequisite	Pharmaceutics Lab	Credit Hours	1
Number & date of course plan approval		Brief Description	See form QF02/0409

Course Objective	The students will be able to apply different theoretical aspects concerned with different unit operations that exist in the pharmaceutical industry.		
Intended Learning Outcomes	<ol style="list-style-type: none"> 1. Upon completion of this course the students will be able to apply different theoretical aspects concerned with different unit operations that exist in the pharmaceutical industry; These include milling, particle size separation and analysis, mixing, granulation, and flowability characterization. 2. Application of these unit operation on solid pharmaceutical dosage forms, namely, tablets, and sustained release dosage forms is also presented. 3. Sugar coating of tablet is also presented. 		
Course Topics	<ol style="list-style-type: none"> 1. This course is intended for application of the theoretical aspects mentioned in the theoretical courses of industrial pharmacy and pharmaceutical technology in order to help the student to confirm his knowledge and to be familiarized with different topics including the theoretical and practical background of the unit operations that exists in the pharmaceutical industry. 2. These include milling, particle size separation and analysis, flowability characterization, mixing, and granulation. 3. It aims also to employ the different unit operations in the preparation and manufacturing of such dosage forms as tablets; coated and uncoated, hard gelatin capsules and sustained release preparations. Their manufacture, evaluation and uses will be thoroughly discussed. 		
Text Books	<ol style="list-style-type: none"> 1. Alton's Pharmaceutics; The Design and Manufacture of Medicines, by: M. E. Aulton. Third Edition. 2007. Churchill Livingstone. 2. Modern Pharmaceutics, vol.2, Applications and advances, A.T. Florence and J. Siepmann, 5th edn., 2009, Informa healthcare 		
References	<ol style="list-style-type: none"> 1-The Theory and Practice of Industrial Pharmacy, by: Leon Lachman, Herbert A. Lieberman and Hoseph L. Kanig. Third Edition. 1986. 2- United States Pharmacopiea, 2010. 3- British Pharmacopiea, 2010. 4- Remingtons; Pharmaceutical Sciences, 2006. 5- Website(s): http://www.alzaytoonah.edu.jo/pharmacy/resources.html 		
Grade	1 st Exam = 25% 2 nd Exam = 25%	Practical Course	Course Work = 50% (Reports, Term Papers, Quizes)

Course Detailed Description – Procedures of the Course Plan Committee /Faculty of Pharmacy

QF02/0408–2.1E

Determination	Final Exam = 50%	Grade Determination	Final Exam = 50%	
Course Outline				
Week	Hours	Subjects	Chapters in Textbook	Notes
1		Milling		
2		Particle Size Analysis		
3		Mixing of powders		
4		Granulation: Effect of Binders on Granules Characteristics		
5		Flow of Powders and Granules		
6		Tabletting		
7		Quality Control of Tablets: Friability, Hardness, Disintegration.		
8		Quality Control of Tablets: dissolution of tablets		
9		Quality Control of Tablets: uniformity of drug content		
10		Tablet and Granules Coating		

Approved by Dept. Chair		Date of Approval	
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Extra Information: (Updated every semester and filled by course instructor)

Course Instructor	Wisam Naser
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Office hours	