



Department	Pharmacy
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<b>Course Name</b>	Pharmaceutical Technology Lab	<b>Course No.</b>	0201542
Prerequisite	Pharmaceutics Lab	Credit Hours	1
Number & date of course plan approval	2010-2011	Brief Description	See form QF02/0409

<b>Intended Learning Outcomes</b>	<ol style="list-style-type: none"> <li>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, flowability characterization, mixing, granulation, and drying.</li> <li>2. Application of these unit operation on solid pharmaceutical dosage forms, namely, tablets, capsules and sustained release dosage forms is also presented.</li> <li>3. Film and sugar coating of tablet are also presented.</li> </ol>		
<b>Course Topics</b>	<ol style="list-style-type: none"> <li>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.</li> <li>2. These include milling, particle size separation and analysis, flowability characterization, mixing, granulation and drying.</li> <li>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.</li> </ol>		
<b>Text Books</b>	<ol style="list-style-type: none"> <li>1. Alton's Pharmaceutics; The Design and Manufacture of Medicines, by: M. E. Aulton. Third Edition. 2007. Churchill Livingstone.</li> <li>2. Modern Pharmaceutics, vol.2, Applications and advances, A.T. Florence and J. Siepmann, 5<sup>th</sup> edn., 2009, Informa healthcare</li> </ol>		
<b>References</b>	<ol style="list-style-type: none"> <li>1-The Theory and Practice of Industrial Pharmacy, by: Leon Lachman, Herbert A. Lieberman and Hoseph L. Kanig. Third Edition. 1986.</li> <li>2- United States Pharmacopiea, 2010.</li> <li>3- British Pharmacopiea, 2010.</li> <li>4- Remingtons; Pharmaceutical Sciences, 2006.</li> <li>5- Website(s): <a href="http://www.alzaytoonah.edu.jo/pharmacy/resources.html">http://www.alzaytoonah.edu.jo/pharmacy/resources.html</a></li> </ol>		
<b>Grade Determination</b>	<input type="checkbox"/> 1 <sup>st</sup> Exam = 25% <input type="checkbox"/> 2 <sup>nd</sup> Exam = 25% <input type="checkbox"/> Final Exam = 50%	<input type="checkbox"/> Practical Course <input type="checkbox"/> Grade <input type="checkbox"/> Determination	<input type="checkbox"/> Course Work = 50% <input type="checkbox"/> (Reports, Term Papers, Quizes) <input type="checkbox"/> Final Exam = 50%



### Course Outline

Week	Hours	Subjects	Chapters in Textbook	Notes
1		Milling and Particle Size Analysis		
2		Flow of Powders and Granules		
3		Mixing of powders		
4		Granulation: Effect of Binders on Granules Characteristics		
5		Drying: Effect of Temperature and Granule Size on Drying Rate		
6		Quality Control of Tablets: Friability, Hardness, Disintegration, Weight Variation		
7		Quality Control of Tablets: dissolution of tablets		
8		Quality Control of Tablets: uniformity of drug content		
9		Tablet and Granules Coating		
10		Capsules Filling and Quality Control		
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Approved by Dept. Chair

Date of Approval

**Extra Information:** (Updated every semester and filled by course instructor)

<b>Course Instructor</b>	
<b>Office No.</b>	
<b>Extension Email</b>	
<b>Office hours</b>	