



**Jordan University of Science and Technology**  
**Faculty of Pharmacy**  
**Pharmacy Department**

PHAR451 Pharmaceutics( 3) - JNQF Level: 7

First Semester 2023-2024

**Course Catalog**

3 Credit Hours. This course introduces students to the basics of physicochemical principles such diffusion phenomena, drug release and dissolution, chemical kinetics and stability, micromeritics and pre-formulation. Based on the previous description, the course also deals with applications of these physicochemical principles in the design of powders and granules, tablets, coated tablets, hard and soft gelatin capsules and sustained release dosage forms.

**Text Book**

Title	Martin's Physical Pharmacy and Pharmaceutical Sciences
Author(s)	Patrick J. Sinko
Edition	7th Edition
Short Name	Reference #1
Other Information	

**Course References**

Short name	Book name	Author(s)	Edition	Other Information
Reference #2	Pharmaceutical Dosage Forms and Drug Delivery Systems	Loyd V. Allen, Jr., Nicolas G. Popovich & Howard C. Ansel	11th Edition	
Reference #3	Lachman/ Lieberman's The Theory and Practice of Industrial Pharmacy	R K Khar; S P Vyas; Farhan J Ahmed; Gauravk Jalin.	4th Edition	

**Instructor**

Name	<b>Prof. Bashar Altaani</b>
Office Location	P2 L1
Office Hours	
Email	altaani@just.edu.jo

**Class Schedule & Room**

Section 2:  
Lecture Time: Mon, Wed : 11:30 - 13:00  
Room: NORTH HALL

Section 4:  
Lecture Time: Sun, Tue, Thu : 08:30 - 09:30  
Room: P1103

**Tentative List of Topics Covered**

Weeks	Topic	References
Weeks 1, 2, 3	Diffusion Phenomena, Drug Release & Dissolution	<b>Chapters 11 and 13 From Reference #1</b>
Week 4	Chemical Kinetics and Stability	<b>Chapter 14 From Reference #1</b>
Week 5	Micromeritics	<b>Chapter 19 From Reference #1</b>

Weeks 6, 7	Preformulation	<b>Chapter 8 From Reference #3</b>
Weeks 8, 9	Tablets	<b>Chapter 8 From Reference #2</b>
Week 10	Coated Tablets	<b>Chapter 8 From Reference #2</b>
Week 11	Hard Gelatin Capsules	<b>Chapter 7 From Reference #2</b>
Week 12	Soft Gelatin Capsule	<b>Chapter 7 From Reference #2</b>
Weeks 13, 14	Sustained Release Dosage Forms	<b>Chapter 9 From Reference #2</b>

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Evaluate the release mechanism of a drug from a pharmaceutical dosage form [1PLO1.1] [1L7K1]	9%	
Select the suitable dissolution method for a pharmaceutical drug product including evaluation [1PLO1.1] [1L7K1]	8%	
Construct stability study for a pharmaceutical product including evaluation and calculation [1PLO1.1] [1L7K1]	8%	
Describe the micromeritics properties of a powder pharmaceutical substance. [1PLO5.1] [1L7K1, 1L7S3]	8%	
Perform pre-formulation study for a pharmaceutical drug substance. [1PLO5.1] [1L7C2]	8%	
Fabricate (formulation, manufacturing and quality control) solid pharmaceutical dosage forms (Tablet, Hard gelatin capsule and Soft gelatin capsule). [1PLO5.1] [1L7S3, 1L7C4]	50%	
Control the rate of drug release from pharmaceutical dosage forms to fabricate sustained release dosage form [1PLO3.1] [1L7S1, 1L7C4]	9%	

Relationship to Program Student Outcomes (Out of 100%)															
PLO1.1	PLO2.1	PLO3.2	PLO3.3	PLO2.2	PLO2.3	PLO2.4	PLO3.1	PLO3.4	PLO3.5	PLO3.6	PLO4.1	PLO4.2	PLO4.3	PLO4.4	PLO5.1
25							9								66

Relationship to NQF Outcomes (Out of 100%)				
L7K1	L7S1	L7S3	L7C2	L7C4
29	4.5	29	8	29.5

Evaluation	
Assessment Tool	Weight
First exam	25%
Second exam	30%
Active learning	5%
Final exam	40%

Policy	
Exams	<ul style="list-style-type: none"> <li>- All exams are closed books and notes.</li> <li>- The final exam is comprehensive (covers all the material).</li> <li>- The first, second, and midterm incomplete exams need approval from the departments' heads.</li> <li>- The final incomplete exams need approval from the dean.</li> </ul>
Cheating	<p>Prohibited; The commitment of the acts of cheating and deceit such as copying during examinations, altering examinations for re-grade, plagiarism of homework assignments, and in any way representing the work of others as your own is dishonest and will not be tolerated. Standard JUST policy will be applied.</p> <p>المادة 7: إذا ضبط الطالب أثناء الامتحان أو الاختبار متلبساً بالغش فتوقع عليه العقوبات التالية مجتمعة</p> <p>أ- اعتباره راسباً في ذلك الامتحان أو الاختبار</p> <p>ب- الغاء تسجيله في بقية المسابقات المسجل لها في ذلك الفصل</p> <p>ج- فصله من الجامعة لمدة فصل دراسي واحد، و هو الفصل التالي للفصل الذي ضبط فيه</p>
Attendance	<ul style="list-style-type: none"> <li>- Attendance is mandatory and will be recorded regularly.</li> <li>- Excellent attendance is expected.</li> <li>- Students who miss more than 20% of the classes will be dropped from the course as per JUST policy.</li> <li>- If you miss class, it is your responsibility to find out about any announcements or assignments you may have missed.</li> </ul>

Active learning and students' participation	- Students are expected to actively participate in class discussions.
Withdraw	- The last day of courses withdrawal (without reimbursement of tuition fees) is 01/09/2023

Date Printed: 2023-10-07