



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

PHAR354 Pharmaceutics 3 - JNQF Level: 7

Summer 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.

**Teaching Method:** On Campus

**Text Book**

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

**Course References**

Short name	Book name	Author(s)	Edition	Other Information
Ref # 2	Pharmaceutical Dosage Forms and Drug Delivery Systems	Lloyd V. Allen, Jr., Nicolas G. Popovich & Howard C. Ansel	11th Edition	
Ref # 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	Prof. Suhair Al-Nimry
Office Location	P2 L1
Office Hours	
Email	ssnimry@just.edu.jo

**Class Schedule & Room**

Section 1:  
 Lecture Time: Sun, Mon, Tue, Wed : 10:00 - 11:30  
 Room: P1101

**Prerequisites**

Line Number	Course Name	Prerequisite Type
303512	PHAR351 Pharmaceutics 2	Prerequisite / Study

**Tentative List of Topics Covered**

Weeks	Topic	References
Weeks 1, 2	Diffusion Phenomena, Drug Release & Dissolution	<b>Chapter 11 and 13 From Ref # 1</b>

Weeks 2, 3	Chemical Kinetics and Stability	Chapter 14 From Ref # 1
Week 3	Micromeritics	Chapter 19 From Ref # 1
Week 4	Preformulation	Chapter 8 From Ref # 3
Weeks 4, 5	Tablets	Chapter 8 From Ref # 2
Weeks 5, 6	Coated Tablets	Chapter 8 From Ref # 2
Week 6	Hard Gelatin Capsules	Chapter 7 From Ref # 2
Weeks 6, 7	Soft Gelatin Capsule	Chapter 7 From Ref # 2
Week 7	Sustained Release Dosage Forms	Chapter 9 From Ref # 2

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]	10%	
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]	7%	
Perform pre-formulation study for a pharmaceutical drug substance. [1PLO5.1] [1L7C2]	8%	
Fabricate (formulation, manufacturing and quality control) solid 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
26							9								65

Relationship to NQF Outcomes (Out of 100%)				
L7K1	L7S1	L7S3	L7C2	L7C4
29.5	4.5	28.5	8	29.5

Evaluation	
Assessment Tool	Weight
1st exam	25%
2nd exam	30%
Active learning	5%
Final exam	40%

Policy	
Exams	All exams are closed books and notes. The final exam is comprehensive (covers all the material). The first and the second incomplete exams need approval from the departments' heads. The final incomplete exams need approval from the dean.
Cheating	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. المادة 7: إذا ضبط الطالب أثناء الامتحان أو الاختبار متلبساً بالغش فتوقع عليه العقوبات التالية مجتمعة: أ- اعتباره راسياً في ذلك الامتحان أو الاختبار ب- الغاء تسجيله في بقية المساقات المسجل لها في ذلك الفصل ج- فصله من الجامعة لمدة فصل دراسي واحد، و هو الفصل التالي للفصل الذي ضبط فيه.

Attendance	Attendance is mandatory and will be recorded regularly. Excellent attendance is expected. Students who miss more than 20% of the classes will be dropped from the course as per JUST policy. If you miss class, it is your responsibility to find out about any announcements or assignments you may have missed.
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 31/5/2024.

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