Jordan University of Science and Technology

Faculty of Pharmacy

Pharmacy Department

PHAR555 Drug Delivery Systems

Second Semester 2022-2023

Course Catalog
3 Credit Hours. This course is designed to provide the students with an insight to the recent advances in the art and science of drug delivery and to assess the prospects and directions of future developments. The course will cover the fundamentals and principles of drug delivery, the strategies and materials used in controlled drug delivery, and the evaluation and characterization of such delivery systems. The strategies and design of controlled delivery systems for various administration routes will also be discussed.

Text Book	
Title	Drug Delivery and Targeting for pharmacists and pharmaceutical scientists
Author(s)	Anya M. Hillery, Andrew W. Lloyd, and James Swarbrick
Edition	1st Edition
Short Name	1
Other Information	Pub.: Taylor & Francis e-library, Year, 2005, Web: http://ajprd.com/downloadebooks_pdf/37.pdf

Course References

Short name	Book name	Author(s)	Edition	Other Information
2	Pharmaceutical Dosage Forms and Drug Delivery Systems	Loyd V. Allen, Jr.; Nicholas G. Popovich and Howard C. Ansel	10th Edition	Pub.: Lippincott Williams & Wilkins, Year: 2014
3	Martin's Physical Pharmacy and Pharmaceutical Sciences	Patrick J. Sinko and Yashveer Singh	6th Edition	Pub.: Lippincott Williams & Wilkins, Year:2011
4	Drug Delivery Systems	Rakesh K. Tekade	1st Edition	Reference, Copyright: Elsevier Inc, Imprint: Academic Press, 2019, https://doi.org/10.1016/C2017-0-01074-1

Instructor	
Name	**Prof. Shereen Assaf**
Office Location	P2 L1
Office Hours	Sun : 09:30 - 12:00 Mon : 13:00 - 13:30 Tue : 09:30 - 12:00 Wed : 13:00 - 13:30
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Class Schedule & Room
Section 1: Lecture Time: Mon, Wed : 11:30 - 13:00 Room: D4202

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Weeks 1, 2, 3	Fundamentals of controlled delivery systems	**Chapter 3** From **1**, **Chapter 9** From **2**

Weeks 4, 5	Factors influencing the design and performance of controlled delivery systems:	**Chapter 3** From **1**, **Chapter 23** From **3**
Week 6	Approaches to controlled delivery dosage forms	**Chapter 23** From **3**
Weeks 7, 8	The polymeric approach	**Chapter 3** From **1**, **Chapters 13 & 20** From **3**
Weeks 9, 10	The parenteral route of administration	**Chapter 5** From **1**, **Chapter 20** From **2**, **Chapter 23** From **3**
Weeks 11, 12	The oral route of administration	**Chapters 6 & 7** From **1**, **Chapters 9 & 20** From **2**, **Chapter 22** From **3**
Weeks 13, 14, 15	Alternative routes for drug delivery	**Chapters 3, 8, 9, & 12** From **1**, **Chapters 11 & 20** From **2**, **Chapter 23** From **3**

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Illustrate the fundamentals and principles of drug delivery and the applications of these fundamentals to building of controlled drug delivery systems. [1PLO1.1]	25%	First Exam, Assignments and participation, Final Exam
Explain the various technologies and strategies used in drug delivery. [1PLO1.1]	25%	First Exam, Second Exam, Assignments and participation, Final Exam
Assess the different materials and approaches used in the design and fabrication of such delivery systems. [1PLO3.1]	25%	Second Exam, Assignments and participation, Final Exam
Utilize the strategies and considerations in the design of different drug delivery systems that will optimize drug delivery to the body from different routes of administration. [1PLO4.3]	25%	Assignments and participation, Final Exam

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
50							25						25		

Evaluation	
Assessment Tool	**Weight**
First Exam	25%
Second Exam	25%
Assignments and participation	10%
Final Exam	40%

Policy	
Exams	- All exams are closed books and notes. - The format for the exams is generally MCQ, and sometimes short answer questions and essay questions. - Grades will be posted within one week or immediately in case of online exams. - The final exam is comprehensive (covers all the material). - All incomplete exams need approval from the departments? heads.
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. The standard JUST policy will be applied. المادة 7: إذا ضُبط الطالب أثناء الامتحان أو الاختبار متلبساً بالغش فتوقع عليه العقوبات التالية مجتمعة: أ- اعتباره راسباً في ذلك الامتحان أو الاختبار. ب- الغاء تسجيله في بقية المساقات المسجل لها في ذلك الفصل. جـ- فصله من الجامعة لمدة فصل دراسي واحد، و هو الفصل التالي للفصل الذي ضبط فيه.
Attendence	- 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	- The students are expected to actively participate in class discussions and do as much literature research as needed. The average work-load student should expect to spend is 6 hours/week.
Withdraw	- The last day of course withdrawal (without reimbursement of tuition fees) is on Friday 2/6/2023.

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