Jordan University of Science and Technology

Faculty of Pharmacy

Pharmacy Department

PHAR750 Drug Design

First Semester 2021-2022

Course Catalog
3 Credit Hours. This course discusses the principles of designing dosage forms from the pharmaceutical point of view starting from conventional dosage forms and to sophisticated dosage forms. This course also includes factors influencing design of dosage forms and different approaches used to enhance stability of drug with the dosage forms

Text Book	
Title	Controlled Drug Delivery Fundamental and Applications
Author(s)	Anya M Hillery, Kinam Park
Edition	2nd Edition
Short Name	1
Other Information	2016

Course References

Short name	Book name	Author(s)	Edition	Other Information
2	Selected publications	-	30th Edition	Several selected publication will be selected to be discussed inside the class

Instructor	
Name	**Prof. Rana Obeidat**
Office Location	P2L4
Office Hours	Sun : 10:30 - 12:30 Mon : 09:00 - 10:00 Tue : 10:30 - 12:30 Wed : 11:15 - 13:15
Email	rmobeidat5@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Sun, Tue : 08:30 - 10:00 Room: قاعة السمعيات/صيدلة

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Weeks 1, 2, 3, 4, 5	- Dosage form design: introduction and importance. - Basic concepts in dosage form design. - Biological, Physical, Chemical, and Biochemical Considerations. a. Bioavailability and bioequivalence b. The importance of physical and chemical properties and biopharmaceutical characteristics of the drug in the selection of its dosage forms	
Weeks 6, 7, 8, 9	Prodrug approach a. To enhance the aqueous solubility b. To enhance lipid solubility c. To alter absorption d. To minimize metabolism e. To decrease side effects	
Weeks 11, 12, 13, 14	Selected topics: new design technologies Fixed-Dose Combinations Value-added medicine New technologies in dosage form design in other routes of drug delivery systems: a. Nasal mechanism b. Buccal mechanism c. Percutaneous mechanism d. Ocular mechanism	
Weeks 15, 16	Dosage form of peptides. What is feasible?	

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Learn the physicochemical factors such as solubility, lipophilicity and stability that influence the design of dosage forms. [1SO1.1]	30%	
Learn to utilize the physicochemical properties in developing effective oral, transdermal and nasal dosage forms [1SO1.1, 1SO3.1]	20%	
Learn approaches used to design effective dosage forms staring from chemical approach to device approach [1SO1.1, 1SO3.1]	25%	
Learn the factors such that must be considered in developing efficacious dosage forms [1SO1.1, 1SO4.3]	25%	

Relationship to Program Student Outcomes (Out of 100%)														
SO1.1	SO2.1	SO3.2	SO3.3	SO2.2	SO2.3	SO2.4	SO3.1	SO3.4	SO3.5	SO3.6	SO4.1	SO4.2	SO4.3	SO4.4
65							22.50						12.50	

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