



**Jordan University of Science and Technology**  
**Faculty of Pharmacy**  
**Doctor Of Pharmacy (Pharm D.) Department**

PHMD451 Compounding Of Sterile Preparations Lab - JNQF Level: 7

First Semester 2024-2025

**Course Catalog**

1 Credit Hours. This course covers the practical methods for compounding sterile pharmaceutical preparations such as intravenous solutions. The course also deals with sterilization methods for parenteral preparations within clinical settings. This course includes evaluating and dispensing these preparations.

**Teaching Method:** On Campus

**Text Book**

Title	Ansel's Pharmaceutical Dosage Forms and Drug Delivery Systems
Author(s)	Loyd V. Allen, Jr.
Edition	11th Edition
Short Name	1
Other Information	

**Course References**

Short name	Book name	Author(s)	Edition	Other Information
2	United States Pharmacopoeia	USP	1st Edition	(Chapter 797: PHARMACEUTICAL COMPOUNDING-STERILE PREPARATIONS) USP 47-NF 42, 2024
3	United States Pharmacopoeia	USP	1st Edition	(Chapter 800: HAZARDOUS DRUGS-HANDLING IN HEALTHCARE SETTINGS)
4	Handbook on Injectable Drugs	Lawrence A. Trissel	20th Edition	ASHP (Publisher)
5	Pharmaceutical Calculations	Howard C. Ansel	13th Edition	Wolters Kluwer - Lippincott Williams & Wilkins (Publisher)

**Instructor**

Name	<b>Mr. Samer Kharashqeh</b>
Office Location	D2 level -2
Office Hours	Mon : 12:30 - 14:30 Tue : 10:30 - 12:30 Wed : 13:30 - 14:30 Thu : 10:30 - 11:30
Email	skkharashqeh@just.edu.jo

**Class Schedule & Room**

Section 2:  
Lecture Time: Sun : 12:30 - 14:30  
Room: LAB

Section 3:  
Lecture Time: Sun : 14:30 - 16:30  
Room: LAB

Section 4:  
Lecture Time: Mon : 08:30 - 10:30  
Room: LAB

Section 5:  
Lecture Time: Mon : 10:30 - 12:30  
Room: LAB

Section 7:  
Lecture Time: Mon : 14:30 - 16:30  
Room: LAB

Section 8:  
Lecture Time: Tue : 08:30 - 10:30  
Room: LAB

Section 10:  
Lecture Time: Tue : 12:30 - 14:30  
Room: LAB

Section 11:  
Lecture Time: Tue : 14:30 - 16:30  
Room: LAB

Section 14:  
Lecture Time: Wed : 14:30 - 16:30  
Room: LAB

Section 15:  
Lecture Time: Thu : 08:30 - 10:30  
Room: LAB

**Prerequisites**

Line Number	Course Name	Prerequisite Type
313541	PHMD354 Pharmaceutics 3	Prerequisite / Study
303544	PHAR354 Pharmaceutics 3	Prerequisite / Study

**Tentative List of Topics Covered**

Weeks	Topic	References
Week 1	Parenteral Dosage Form in Clinical Setting and Equipment	From 1, From 4
Week 2	Compatibility of IV Admixtures	From 1, From 4
Week 3	Design, Function & Cleaning of Sterile Product Areas	From 2
Week 4	CSP Categories & Sterilization Techniques	From 1, From 2
Week 5	Responsibilities of Compounding Personnel	From 2
Week 6	Aseptic Technique: Reconstitution of IV Drugs	From 1, From 4
Week 7	Mid-Term Practical Part	
Week 8	Osmolarity and IV-related Calculations	From 1, From 5

Week 9	Nutrition and Pharmacy Calculations	From 1, From 5
Week 10	Allergenic Dilution	From 1, From 2
Week 11	Hazardous Drugs (HD)	From 3

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Discuss compounded sterile preparations (CSPs) with their dispensing requirements at hospitals and to classify them into different categories. [1PLO1.1] [1L7K1]	20%	
Evaluate the work of compounding personnel using different tests, for example: media fill test & glove fingertip test. [1PLO2.2] [1L7S3]	10%	
Find the following procedures regarding USP-chapter 797 protocol: Laminar flow hood cleaning, hand washing and garbing. [1PLO4.4] [1L7S1]	10%	
Assess sterile drugs including proper powder in vial reconstitution with sterile water for injection under aseptic conditions with proper labelling. [1PLO5.1] [1L7S2]	10%	
Identify hazardous drugs properly especially chemotherapy products. [1PLO5.1] [1L7S2]	10%	
Complete allergen immunotherapy dilution calculations properly. [1PLO1.1] [1L7K1]	10%	
Compute accurate pharmaceutical calculations regarding compounding sterile preparations (CSPs) including total parenteral nutrition (TPN) calculations. [1PLO1.1] [1L7K1]	20%	
Construct literature search to obtain reliable information regarding compatibility of different admixtures. [1PLO2.2] [1L7C1]	10%	

Relationship to Program Student Outcomes (Out of 100%)															
PLO1.1	PLO2.1	PLO2.2	PLO2.3	PLO2.4	PLO3.1	PLO3.2	PLO3.3	PLO3.4	PLO3.5	PLO3.6	PLO4.1	PLO4.2	PLO4.3	PLO4.4	PLO5.1
50		20												10	20

Relationship to NQF Outcomes (Out of 100%)				
L7K1	L7S1	L7S2	L7S3	L7C1
50	10	20	10	10

Evaluation	
Assessment Tool	Weight
Midterm exam	25%
Final exam (practical and theoretical)	40%
Quizzes	15%
Assignments	10%
Product evaluation	5%
Personal evaluation	5%

Policy	
Communicating with Instructors	Students should communicate through their official JUST emails. Communication through personal email accounts (yahoo, Gmail, Hotmail, etc.) or social media will NOT be accepted, and no response will be provided. Students are required to check their emails and the E-learning page of the course regularly for announcements and notifications.
Exams	All exams are closed books and notes. The final exam is comprehensive (covers all the material). The first, second, and midterm incomplete exams need approval from the departments? heads. The final incomplete exams need approval from the dean.

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 المساقات 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	<p>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.</p>
Active learning and students' participation	<p>Students are expected to actively participate in class discussions.</p>
Withdraw	<p>Last day to drop the course is before the twelve (12th) week of the current semester</p>
Classroom Etiquette	<ul style="list-style-type: none"> <li>- Respect <ul style="list-style-type: none"> <li>o Respect people, places, and things.</li> <li>o Raise your hand to speak.</li> <li>o Listen respectfully.</li> <li>o Food and drink are not permitted in class.</li> <li>o Do not engage in aside conversations.</li> </ul> </li> <li>- Participation or Disruption: <ul style="list-style-type: none"> <li>o Do not hesitate to ask questions at any time, especially if you are unsure of something.</li> <li>o Listen to other students' questions to avoid asking the same question five minutes later.</li> <li>o Allow your classmates to participate in class discussions and refrain from taking advantage of all opportunities for active participation.</li> </ul> </li> <li>- Cell Phones and Electronic Devices: <ul style="list-style-type: none"> <li>o Texting is not permitted in class.</li> <li>o The use of cell phones, smartphones, or other mobile communication devices is disruptive and is therefore prohibited during class without permission.</li> <li>o Your phone should be turned off. If you must keep your phone on, you should set it to vibrate or silent mode and leave class if you receive an emergency call.</li> <li>o Except in emergencies, those using such devices must leave the classroom for the remainder of the class period.</li> <li>o Do not use your laptop in class for browsing the Internet or using social media while in class.</li> </ul> </li> <li>- Missing a Class <ul style="list-style-type: none"> <li>o Do not miss classes. It is not appropriate to ask the professor if you missed anything important if you miss class. Obviously, something of importance was missed, you missed a whole class!</li> <li>o Whenever you are absent from class, it is your responsibility to make up the work and to get notes, not your professor's.</li> <li>o If you need to leave early, notify the instructor.</li> </ul> </li> <li>- Be Punctual <ul style="list-style-type: none"> <li>o Make sure you arrive to class on time.</li> </ul> </li> </ul>
Email Etiquette	<ul style="list-style-type: none"> <li>- Type your email in the body of the email NOT in the subject line.</li> <li>- Provide a clear subject line. Keep it short and to the point, but not vague. Name, class, and what the email is specifically about should be in the subject line.</li> <li>- Body of the email: Your emails should always start with a formal greeting like you would in a letter, be brief (one screen length), check your spelling/grammar/punctuation, use a professional font (not decorative), and include a salutation aligned with your message (Thank you or Sincerely).</li> <li>- Avoid sending an email to your professor asking about grades or complaining about them. Schedule an appointment to meet in person to discuss areas for improvement if you have inquiries.</li> <li>- Consider the impression your tone will make in the email. It is recommended waiting 24 hours before sending an email or responding to an email if you are emotionally charged.</li> <li>- It is not appropriate to write in ALL CAPS. This conveys the impression that you are shouting at the recipient.</li> <li>- Make sure you read and reread your email before sending it. Make sure your emails are grammatically correct, have proper titles, and are properly spelled.</li> <li>- If you have multiple questions or the message runs long, you might consider revising the message or scheduling a face-to-face meeting.</li> <li>- You should double-check your ATTACHMENTS. Refer to your attachments within the body of your email. It is advisable to avoid attaching large files and to consider sending the document as a PDF.</li> <li>- Please allow sufficient time for a response. The sender and receiver should both allow sufficient time. As a rule of thumb, 24 work hours should be given. If sending emails after official work hours or during formal vacations, a delay in response is expected. Following that, if no response is received, you can follow up.</li> </ul>