



Jordan University of Science and Technology

Faculty of Pharmacy

Pharmacy Department

PHAR224 Medicinal Chemistry 1 - JNQF Level: 7

Second Semester 2024-2025

Course Catalog

3 Credit Hours. This course provides an in-depth look at drugs' pharmacokinetics (absorption and metabolism) and pharmacodynamics, as well as the influence of drugs' physicochemical properties on drug action. The concept of rational drug design and computer-aided drug design will be introduced. The course also explains the structure-activity relationships of drugs acting on the central nervous system and the autonomic nervous system.

Teaching Method: On Campus

Text Book

Title	Foye's principles of medicinal chemistry
Author(s)	Thomas L. Lemke, David A. Williams
Edition	8th Edition
Short Name	Ref #1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref #2	An Introduction to Medicinal Chemistry	Graham Patrick	7th Edition	
Ref #3	Wilson and Gisvold's textbook of Organic Medicinal and Pharmaceutical Chemistry	John H. Block, John M. Beale	12th Edition	

Class Schedule & Room

Section 1:

Lecture Time: Sun, Tue, Thu : 09:00 - 10:00
Room: P1101

Section 2:

Lecture Time: Mon, Wed : 15:00 - 16:30
Room: P1101

Section 3:

Lecture Time: Sun, Tue, Thu : 11:00 - 12:00
Room: SOUTH HALL

Section 4:

Lecture Time: Sun, Tue, Thu : 12:00 - 13:00
Room: SOUTH HALL

Section 5:

Lecture Time: Mon, Wed : 13:30 - 15:00
Room: P1102

Section 6:

Lecture Time: Mon, Wed : 12:00 - 13:30
Room: NORTH HALL

Prerequisites		
Line Number	Course Name	Prerequisite Type
822620	HSS262CHEM Biochemistry	Prerequisite / Study
912620	CHEM262 Biochemistry	Prerequisite / Study
301240	PHAR124 Pharmaceutical Organic Chemistry	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Introduction to medicinal chemistry	From Ref #1
Weeks 4, 5, 6	Pharmacokinetics	From Ref #1
Week 8	Bioisosterism	From Ref #2
Weeks 7, 8	Pharmacodynamics	From Ref #1
Weeks 11, 12	Cholinergic system	From Ref #1
Weeks 9, 10	Adrenergic system	From Ref #1
Week 13	Sedative-Hypnotics	From Ref #1
Week 13	Antipsychotics	From Ref #1
Week 14	Antidepressants and anti-Parkinson's	From Ref #1
Weeks 1, 2, 3	Physico-chemical properties of drug compounds	From Ref #1

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Predict the physicochemical properties and pharmacokinetic profile of drug compounds based on their chemical structure. [1PLO1.1] [1L7K1, 1L7S1, 1L7S2]	34%	
Predict drugs' interaction with macro-molecular targets based on their chemical structures. [1PLO3.1] [1L7K1, 1L7S1, 1L7S2]	23%	
Identify structural properties of drugs that act at the peripheral nervous system. [1PLO3.1] [1L7K1, 1L7S1, 1L7S2]	24%	
Identify structural properties of drugs acting at the central nervous system. [1PLO3.1] [1L7K1, 1L7S1, 1L7S2]	19%	

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
34							66								

Relationship to NQF Outcomes (Out of 100%)		
L7K1	L7S1	L7S2
33.33	33.33	33.33

Evaluation	
Assessment Tool	Weight
First Exam	30%
Second Exam	25%
Active Learning	5%
Final Exam	40%

Policy

Exams	<ol style="list-style-type: none"> 1. The format for the exams is generally (but NOT always) as follows: Multiple-choice and short essay questions. 2. Grades will not be given out via e-mail 3. All exams are closed book and notes. The final exam is comprehensive (covers all the material). 4. Instructor should return exam papers graded to students not after the week following the exam date. 5. Incomplete exams should not be given unless there is a valid excuse and they need approval from the dean. 6. Arrangements to take an exam at a time different than the one scheduled MUST be made prior to the scheduled exam time.
Cheating	<p>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 أ- اعتباره راسياً في ذلك الامتحان أو الاختبار ب- إلغاء 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</p>
Attendance	<ol style="list-style-type: none"> 1. Excellent attendance is expected. 2. JUST policy requires the faculty member to assign ZERO grade (35) if a student misses 10% of the classes that are not excused, and a total of 20% with approved valid excuses. 3. If you miss class, it is your responsibility to find out about any announcements or assignments you may have missed.
Participation	Students are expected be proactive and to be fully engaged in interactive class discussions.
Drop date (withdraw)	Last day to drop the course is last day before the final exams

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