



Jordan University of Science and Technology

Faculty of Pharmacy

Pharmacy Department

PHAR421 Medicinal Chemistry(3) - JNQF Level: 7

First Semester 2023-2024

Course Catalog

3 Credit Hours. This course discusses the medicinal chemistry of antibiotics, antifungal, antiviral and anticancer agents, covering structure activity relationship, mechanism of action and other issues related to physicochemical properties of each class members.

Text Book

Title	Foye's principles of medicinal chemistry
Author(s)	Thomas L. Lemke, David A. Williams
Edition	9th 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	6th Edition	
Ref. 3	Wilson and Gisvold's textbook of organic medicinal and pharmaceutical chemistry	John H. Block, John M. Beale	12th Edition	
Other resources	Other useful resources	Variable	1st Edition	

Instructor

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Instructor

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Class Schedule & Room

<p>Section 1: Lecture Time: Sun, Tue, Thu : 08:30 - 09:30 Room: M1302</p> <p>Section 2: Lecture Time: Sun, Tue, Thu : 10:30 - 11:30 Room: M1302</p> <p>Section 4: Lecture Time: Mon, Wed : 13:00 - 14:30 Room: M1302</p>
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Tentative List of Topics Covered		
Weeks	Topic	References
Weeks 1, 2	Antimicrobial agents: Sulfonamides and Quinolones	Chapter 33 From Ref. 1
Weeks 3, 4, 5, 6	B-lactam antibiotics: Penicillins, Cephalosporins, Carbapenems, and Monobactams	Chapter 33 From Ref. 1
Weeks 7, 8	Tetracyclines, Aminoglycosides, and Macrolide Antibiotics	Chapter 33 From Ref. 1
Week 9	Antifungal agents	Chapter 35 From Ref. 1
Week 9	Antiviral agents	Chapter 38 From Ref. 1
Weeks 10, 11, 12, 13	Cancer chemotherapy	Chapters 9 and 21 From Ref. 2

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Explain the relationship between the drug's structure and pharmacological action of the different anti-infective and anti-cancer drugs. [1PLO1.1] [1L7K1, 1L7S2]	35%	First Exam, Second Exam, Final Exam
Predict, based on composition and 3D structure, the pharmacodynamic and pharmacokinetic profiles of drugs and their physicochemical properties-activity relationship [1PLO1.1] [1L7K1, 1L7S1, 1L7S2]	50%	First Exam, Second Exam, Final Exam
Analyze the in vitro potency and in vivo efficacy of the drug. [1PLO1.1] [1L7S1]	5%	First Exam, Second Exam, Final Exam
Identify the necessary structural alterations that can be made to address side effect concerns. [1PLO3.1] [1L7S1, 1L7S2]	5%	First Exam, Second Exam, Final Exam
Identify the various Computer Aided Drug Design (CADD) techniques and tools that aid in the different phases of drug design. [1PLO3.1] [1L7K1]	5%	Active Learning

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
90							10								

Relationship to NQF Outcomes (Out of 100%)		
L7K1	L7S1	L7S2
39.17	24.17	36.67

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

Policy

Exams	<p>1- The format for the exams is generally (but NOT always) as follows: Multiple-choice and short essay questions.</p> <p>2- Grades will not be given out via e-mail</p> <p>3- All exams are closed book and notes. The final exam is comprehensive (covers all the material).</p> <p>4- Instructor should return exam papers graded to students not after the week following the exam date.</p> <p>5- Incomplete exams should not be given unless there is a valid excuse and they need approval from the dean.</p> <p>6- Arrangements to take an exam at a time different than the one scheduled MUST be made prior to the scheduled exam time.</p>
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 ضُبط 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 يلي الفصل الذي ضبط فيه.</p>
Attendance	<p>1. Excellent attendance is expected.</p> <p>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.</p> <p>3. 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>
Drop Date (withdraw)	<p>Last day to drop the course is before the twelfth (12th) week of the current semester.</p>

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