



كلية الصيدلة جامعة الزيتونة الأردنية
Faculty of Pharmacy
Al-Zaytoonah University of Jordan

" نحو تعليم صيدلاني متميز "
Toward Excellence in Pharmaceutical
Education

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Al-Zaytoonah University of Jordan
كلية الصيدلة
Faculty of Pharmacy



" Tradition and Quality "

Detailed Course Description - Course Plan Development and Updating Procedures/ Pharmacy Department	QF02/0408-3.0E
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Faculty	Pharmacy	Department	Pharmacy
Course number	0201511	Course title	Medicinal Chemistry-3
Number of credit hours	3	Pre-requisite/co-requisite	Medicinal Chemistry-2

Brief course description

This course is a continuation of medicinal chemistry-2. It discusses the structure-activity relationship, chemistry, mode of action, and metabolism of some classes of chemotherapeutic agents such as antibacterial, antimycobacterial, antifungal, antiparasitic, antiviral, and anticancer drugs. In addition to drugs affecting the hormonal system.

Course goals and learning outcomes	
Goal 1	Exploration of the role of organic chemistry in the design, development and activity of drugs.
Learning outcomes	<p>1.1 Student will learn about the majority of drug classes and gain the knowledge of chemistry of clinically used drugs.</p> <p>1.2 Student should be able to correlate chemical structures with pharmacological activities.</p> <p>1.3 Student becomes capable of understanding other related courses depending on the great background in medicinal chemistry.</p>
Textbook	<p>1. Foye's Principles of Medicinal Chemistry, 7th edition, Thomas L. Lemke and David A. Williams, Lippincott Williams & Wilkins, 2013.</p> <p>2. Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry, 12th edition, J. N. Delgado and W. A. Remers, Lippincott-Raven, 2011.</p>
Supplementary references	<p>1. The Organic Chemistry of Drug Design and Drug Action, 2nd edition, Richard B. Silverman, Elsevier, 2004.</p> <p>2. Burger's Medicinal Chemistry and Drug Discovery, 6th edition, M. E. Wolff, 2003.</p> <p>3. The Organic Chemistry of Drug Synthesis, Vol. 1-6, D. Lednicer and L. A. Mitscher, John Wiley and Sons.</p> <p>4. Drug Design Cutting Edge Approaches Edited by Darren R. Flower</p>



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Course timeline				
Week	Number of hours	Course topics	Pages (textbook)	Notes
01	1	Synthetic Antimicrobial Agents Sulfonamides. Quinolones. Miscellaneous agents.	Textbook 1/ Chapter 38	
	1			
	1			
02	1	Antibiotics β -Lactams. Penicillins.	Textbook 1/ Chapter 38	
	1			
	1			
03	1	Penicillins. Cephalosporins. Carbapenems.	Textbook 1/ Chapter 38	
	1			
	1			
04	1	Aminoglycosides and Aminocyclitols. Macrolides. Tetracyclines. Lincosaminides.	Textbook 1/ Chapter 38	
	1			
	1			
05	1	Antifungal Drugs Polyene antibiotics. Azoles. Allyl amines and others.	Textbook 1/ Chapter 40	
	1			
	1			
06	1	Antimycobacterial Agents Treatment of Tuberculosis (anti-TB). Mycobacterium avium-intracellular Complex. Drug therapy for Leprosy.	Textbook 1/ Chapter 41	
	1			
	1			
07	1	Antiparasitic Agents Treatment of Amebiasis, Giardiasis, and Trichomoniasis. Treatment of Leishmeniasis.	Textbook 1/ Chapter 39	
	1			
	1			
08	1	Treatment of Pneumocystis (PCP). Treatment of Trypanosomiasis. Treatment of Malaria. Drug therapy for Helminth infections. Drug therapy for Scabies and Pediculosis.	Textbook 1/ Chapter 39	
	1			
	1			
09	1	Cancer and Cancer Chemotherapy Alkylating agents (Nitrogen mustards). Other alkylating agents. Nitrosoureas.	Textbook 1/ Chapter 42	
	1			
	1			
10	1	Antimetabolites and nucleoside analogues. Other antimetabolites. Antitumor antibiotics.	Textbook 1/ Chapter 42	
	1			
	1			
11	1	Antimitotic agents. Miscellaneous antineoplastics. Hormonal therapy	Textbook 1/ Chapter 42	
	1			
	1			



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12	1	Antiviral Agents and Protease Inhibitors Agents inhibiting virus attachment, penetration and replication. Agents interfering with viral nucleic acid replication.	Textbook 1/ Chapter 43
	1		
	1		
13	1	Antiretroviral (Anti-HIV) agents. Nucleoside and non-nucleoside reverse transcriptase inhibitors (NRTI and NNRTI).	Textbook 1/ Chapter 43
	1		
	1		
14	1	Insulin Oral Hypoglycemic Drugs	Textbook 1/ Chapter 32
	1		
	1		
15	1	Antithyroid Drugs	Textbook 1/ Chapter 34
	1		
	1		
16	1	Calcium Homeostasis	Textbook 1/ Chapter 35
	1		
	1		

Theoretical course evaluation methods and weight	First exam 25% Second exam 25% Final exam 50%
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Approved by head of department		Date of approval	
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Extra information (to be updated every semester by corresponding faculty member)

Name of teacher	Dr. Reema Abu Khalaf	Office Number	223
Phone number (extension)	280	Email	reema.abukhalaf@zuj.edu.jo
Office hours	10-11 (Sun., Mon., Tue., Wed., Thu.)		