



Course Detailed Description – Procedures of the Course Plan Committee /Faculty of Pharmacy

QF02/0408–2.1E

<b>Department</b>	Pharmacy
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<b>Course Name</b>	<b>Medicinal Chemistry -3-</b>	<b>Course No.</b>	<b>0201511</b>
Prerequisite	Medicinal Chemistry -2-	Credit Hours	3
Number & date of course plan approval		Brief Description	See form QF02/0409

<b>Course Objectives</b>	To explore the role of organic chemistry in the design, development and activity of drugs.
<b>Intended Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. To cover the majority of drug classes in order to prepare highly qualified students in the knowledge of the chemistry of clinically used drugs.</li> <li>2. Students should be able to correlate chemical structures with pharmacological activities.</li> <li>3. To give students a great background in medicinal chemistry so they become capable of understanding other related courses.</li> </ol>
<b>Course Topics</b>	<ol style="list-style-type: none"> <li>1. Antibiotics and Antimicrobial Agents</li> <li>2. Antifungal Drugs</li> <li>3. Antimycobacterial Agents</li> <li>4. Antiparasitic Agents</li> <li>5. Cancer and Cancer Chemotherapy</li> <li>6. Antiviral Agents and Protease Inhibitors</li> <li>7. Insulin and Oral Hypoglycemic Drugs</li> <li>8. Antithyroid Drugs</li> <li>9. Calcium Homeostasis</li> </ol>
<b>Text Books</b>	<ol style="list-style-type: none"> <li>1. Foye's Principles of Medicinal Chemistry, 6th edition, Thomas L. Lemke and David A. Williams, Lippincott Williams &amp; Wilkins, 2008.</li> <li>2. Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry, 12th edition, J. N. Delgado and W. A. Remers, Lippincott-Raven, 2011.</li> </ol>

<b>References</b>	<ol style="list-style-type: none"> <li>The Organic Chemistry of Drug Design and Drug Action, 2nd edition, Richard B. Silverman, Elsevier, 2004.</li> <li>Burger's Medicinal Chemistry and Drug Discovery, 6th edition, M. E. Wolff, 2003.</li> <li>The Organic Chemistry of Drug Synthesis, Vol. 1-6, D. Lednicer and L. A. Mitscher, John Wiley and Sons.</li> </ol>			
<b>Grade Determination</b>	1 <sup>st</sup> Exam = 25% 2 <sup>nd</sup> Exam = 25% Final Exam = 50%			
<b>Course Outline</b>				
<b>Week</b>	<b>Hours</b>	<b>Subjects</b>	<b>Chapters in Textbook</b>	<b>Notes</b>
1	1 1 1	<b>Synthetic Antimicrobial Agents</b> Sulfonamides. Quinolones. Miscellaneous agents.	Textbook 1/ Chapter 38	
2	1 1 1	<b>Antibiotics</b> $\beta$ -Lactams. Penicillins.	Textbook 1/ Chapter 38	
3	1 1 1	Penicillins. Cephalosporins. Carbapenems.	Textbook 1/ Chapter 38	
4	1 1 1	Aminoglycosides and Aminocyclitols. Macrolides. Tetracyclines. Lincosaminides.	Textbook 1/ Chapter 38	
5	1 1 1	<b>Antifungal Drugs</b> Polyene antibiotics. Azoles. Allyl amines and others.	Textbook 1/ Chapter 40	
6	1 1 1	<b>Antimycobacterial Agents</b> Treatment of Tuberculosis (anti-TB). Mycobacterium avium-intracellular Complex. Drug therapy for Leprosy.	Textbook 1/ Chapter 41	
7	1 1 1	<b>Antiparasitic Agents</b> Treatment of Amebiasis, Giardiasis, and Trichomoniasis. Treatment of Leishmeniasis.	Textbook 1/ Chapter 39	
8	1 1 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	
9	1 1	<b>Cancer and Cancer Chemotherapy</b> Alkylating agents (Nitrogen mustards).	Textbook 1/ Chapter 42	



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	1	Other alkylating agents. Nitrosoureas.		
10	1 1 1	Antimetabolites and nucleoside analogues. Other antimetabolites. Antitumor antibiotics.	Textbook 1/ Chapter 42	
11	1 1 1	Antimitotic agents. Miscellaneous antineoplastics. Hormonal therapy	Textbook 1/ Chapter 42	
12	1 1 1	<b>Antiviral Agents and Protease Inhibitors</b> Agents inhibiting virus attachment, penetration and replication. Agents interfering with viral nucleic acid replication.	Textbook 1/ Chapter 43	
13	1 1 1	Antiretroviral (Anti-HIV) agents. Nucleoside and non-nucleoside reverse transcriptase inhibitors (NRTI and NNRTI).	Textbook 1/ Chapter 43	
14	1 1 1	<b>Insulin</b> <b>Oral Hypoglycemic Drugs</b>	Textbook 1/ Chapter 32	
15	1 1 1	<b>Antithyroid Drugs</b>  <b>Calcium Homeostasis</b>	Textbook 1/ Chapter 34 Chapter 35	

Approved by Dept. Chair		Date of Approval	
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**Extra Information:** (Updated every semester and filled by course instructor)

<b>Course Instructor</b>	Dr. Reema Abu Khalaf
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<b>Office hours</b>	10:00-11:00 (Sun., Tue., Thu.), 11:00-12:00 (Mon., Wed.)