



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

QF02/0408-1.0

Department	Pharmacy
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<b>Course Name</b>	<b>Medicinal Chemistry-3</b>	<b>Course No.</b>	<b>201511</b>
Prerequisite	Medicinal Chemistry-2	Credit Hours	3
Number & date of course plan approval		Brief Description	See form QF02/0409

<b>Intended Learning Outcomes</b>	<ol style="list-style-type: none"> <li>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>Students should be able to correlate chemical structures with pharmacological activities.</li> <li>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>Antibiotics and Antimicrobial Agents</li> <li>Antifungal Drugs</li> <li>Antimycobacterial Agents</li> <li>Antiparasitic Agents</li> <li>Cancer and Cancer Chemotherapy</li> <li>Antiviral Agents and Protease Inhibitors</li> <li>Insulin and Oral Hypoglycemic Drugs</li> <li>Antithyroid Drugs and Calcium Homeostasis</li> <li>Adrenocorticoids</li> </ol>
<b>Text Books</b>	<ol style="list-style-type: none"> <li>Foye's Principles of Medicinal Chemistry, 6<sup>th</sup> edition, Thomas L. Lemke and David A. Williams, Lippincott Williams &amp; Wilkins, 2008.</li> <li>Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry, 12<sup>th</sup> edition, J. N. Delgado and W. A. Remers, Lippincott-Raven, 2011.</li> <li>An introduction to Medicinal chemistry, 4<sup>th</sup> edition, Graham Patrick, Oxford University Press, 2008.</li> </ol>
<b>References</b>	<ol style="list-style-type: none"> <li>The Organic Chemistry of Drug Design and Drug Action, 2<sup>nd</sup> edition, Richard B. Silverman, Elsevier, 2004.</li> <li>Burger's Medicinal Chemistry and Drug Discovery, 6<sup>th</sup> 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%



Course Outline				
Week	Hours	Subjects	Chapters in Textbook	Notes
1 <sup>st</sup>	1 1 1	<b>Synthetic Antimicrobial Agents</b> Sulfonamides. Quinolones. Miscellaneous agents.	Textbook 1/ Chapter 38	
2 <sup>nd</sup>	1 1 1	<b>Antibiotics</b> $\beta$ -Lactams. Penicillins.	Textbook 1/ Chapter 38	
3 <sup>rd</sup>	1 1 1	Penicillins. Cephalosporins. Carbapenems.	Textbook 1/ Chapter 38	
4 <sup>th</sup>	1 1 1	Aminoglycosides and Aminocyclitols. Macrolides. Tetracyclines. Lincosaminides.	Textbook 1/ Chapter 38	
5 <sup>th</sup>	1 1 1	<b>Antifungal Drugs</b> Polyene antibiotics. Azoles. Allyl amines and others.	Textbook 1/ Chapter 40	
6 <sup>th</sup>	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 <sup>th</sup>	1 1 1	<b>Antiparasitic Agents</b> Treatment of Amebiasis, Giardiasis, and Trichomoniasis. Treatment of Leishmeniasis.	Textbook 1/ Chapter 39	
8 <sup>th</sup>	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 <sup>th</sup>	1 1 1	<b>Cancer and Cancer Chemotherapy</b> Alkylating agents (Nitrogen mustards). Other alkylating agents. Nitrosoureas.	Textbook 1/ Chapter 42	
10 <sup>th</sup>	1 1 1	Antimetabolites and nucleoside analogues. Other antimetabolites. Antitumor antibiotics.	Textbook 1/ Chapter 42	
11 <sup>th</sup>	1 1 1	Antimitotic agents. Miscellaneous antineoplastics. Hormonal therapy	Textbook 1/ Chapter 42	
12 <sup>th</sup>	1 1	<b>Antiviral Agents and Protease Inhibitors</b> Agents inhibiting virus attachment, penetration	Textbook 1/ Chapter 43	



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	1	and replication. Agents interfering with viral nucleic acid replication.		
13 <sup>th</sup>	1 1 1	Antiretroviral (Anti-HIV) agents. Nucleoside and non-nucleoside reverse transcriptase inhibitors (NRTI and NNRTI).	Textbook 1/ Chapter 43	
14 <sup>th</sup>	1 1 1	<b>Insulin and Oral Hypoglycemic Drugs</b>  <b>Antithyroid Drugs</b>	Textbook 1/ Chapter 32, 34	
15 <sup>th</sup>	1 1 1	<b>Calcium Homeostasis</b>  <b>Adrenocorticoids</b>	Textbook 1/ Chapters 35, 33	

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>	
<b>Office No.</b>	
<b>Extension</b>	
<b>Email</b>	
<b>Office hours</b>	