



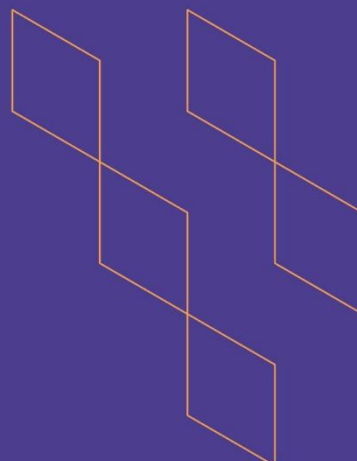
T-104
2022

Course Specification



T-104
2022

Course Specification



Course Title: **Medicinal Chemistry -3**

Course Code: **PHC-411**

Program: **Pharmaceutical Sciences**

Department: **Pharmaceutical Chemistry**

College: **Pharmacy**

Institution: **Najran University**

Version: **CS-V1**

Last Revision Date: **20.12.2023**



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A. General information about the course:

Course Identification	
1. Credit hours:	
2. Course type	
a.	University <input type="checkbox"/> College <input checked="" type="checkbox"/> Department <input type="checkbox"/> Track <input type="checkbox"/> Others <input type="checkbox"/>
b.	Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
3. Level/year at which this course is offered:	7th Level/ 3th year
4. Course general Description The course includes detailed information about the nomenclature chemical structure, synthesis, and methods of assay of the chemotherapeutic agents including the antibacterial, antifungal, antiviral and anthelmintic agents this in addition to the chemotherapy of anticancer drugs and immunosuppressive agents. Also, the course teaches the chemistry of hormones its synthetic analogs and the hormone antagonists.	
5. Pre-requirements for this course (if any): PHC -312	
6. Co- requirements for this course (if any): None	
7. Course Main Objective(s)	
<ul style="list-style-type: none"> a- In the context of developing knowledge, the students continue their study, and they are expected to deepening their understanding of medicinal chemistry role in discovery, development, synthesis and study of therapeutic agents. b- Identify functional groups and ring systems that characterize each of the drug classes. c- Identify the structural features and functional groups important for the pharmacological actions(s) of each drug class. d- Recognize how changes in structural features and functional groups affect potency and activity of each drug class. e- Understand the mechanism of action (where known) of the various drugs. f- Make intelligent hypotheses about the biological activity, mechanism, and/or metabolism of an unknown compound based on the structural features found in the molecule. g- Describe the cross-reactivity between drug classes based on structure-activity relationships. 	

mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	45	100
2.	E-learning		



No	Mode of Instruction	Contact Hours	Percentage
3.	Hybrid <ul style="list-style-type: none"> Traditional classroom E-learning 		
4.	Distance learning		

(based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	45
2.	Laboratory/Studio	
3.	Field	
4.	Tutorial	
5.	Others (specify) homework's and assignments	45
	Total	90



B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Develop the essential facts, concepts, principles and theories relating to the subject areas of medicinal chemistry and quantitative structure activity relationship of various classes of medicinal chemistry	K3	Lectures Assignment Interactive questioning and answering	Theoretical Exams, workplace assessment and assignments
1.2				
...				
2.0	Skills			
2.1	Interpret the chemical information and data concerning structure activity relationship	S1	Lectures Assignment Interactive questioning and answering	Theoretical Exams, workplace assessment and assignments
2.2	Demonstrate the ability to correlate drug action to their structural formation	S1		
2.3	Communicate clearly by verbal and writing means	S5		
3.0	Values, autonomy, and responsibility			
3.1	Demonstrate how run a modification in a drug structure for better activity and lower side effects	V4	Lectures Assignment Interactive questioning and answering	Theoretical Exams, workplace assessment and assignments

C. Course Content

No	List of Topics	Contact Hours
1	Antibacterial agents (Lactam antibiotics & non-beta-lactam antibiotics)	6
2	Anti-fungal	6
3	Anti-viral	6
4	Cancer chemotherapy	6
5	Anti-parasitic agents	2
6	Anthelmintic agents	2
7	Anti-tubercular drugs	2
8	Antimalarial drugs	2
8	Thyroid hormones	3
10	Steroidal Hormones (sex and corticosteroids hormones)	6
11	Antidiabetic agents	4
Total		45

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quiz Exam 1	4	10
2.	Mid-Term Exam	9-7	25
3.	Assignments	15	10
4.	Observation card	15	5
5.	Final exam	17-19	50
	Total		100

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)



E. Learning Resources and Facilities

Essential References	<ol style="list-style-type: none"> 1. Textbook of drug design and discovery (3rd edition) by Povl Krogsgaard-Larsen, Tommy Liljefors, Ulf Madsen. 2. The Organic Chemistry of Drug Design and Drug Action, (3rd Edition) by Richard B. Silverman and Mark W. Holladay 3. An Introduction to Medicinal Chemistry (6th edition) by Graham L. Patrick 4. Wilson and Gisvolds Textbook of Organic Medicinal and Pharm. Chemistry, 12th edition.
Supportive References	<ul style="list-style-type: none"> • Textbook of drug design and discovery (3rd edition) by Povl Krogsgaard-Larsen, Tommy Liljefors, Ulf Madsen. • PowerPoint slides
Electronic Materials	http://www.dlaf.nu.edu.sa/ http://www.drugdesign.com
Other Learning Materials	NA



Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Suitable lecture room equipped with data show and internet and sufficient number of seats.
Technology equipment (projector, smart board, software)	Computers, data show, sound systems and internet
Other equipment (depending on the nature of the specialty)	NA

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Head of department Students	Indirect Questioners (indirect
Effectiveness of student's	Faculty members	Indirect



Assessment Areas/Issues	Assessor	Assessment Methods
assessment	Students	Questioners (indirect
Quality of learning resources	Students	Questioners(indirect)
The extent to which CLOs have been achieved	Students peer reviewer	Direct
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	PHARMACEUTICAL CHEMISTRY DEPARTMENT COUNCIL
REFERENCE NO.	COUNCIL NO.
DATE	20-12-2023

