



Course Specification

(Bachelor)

Course Title: Pharmaceutical Organic Chemistry-1

Course Code: PHCH 211

Program: Pharmaceutical Sciences

Department: Pharmaceutical Chemistry

College: Pharmacy

Institution: Najran University

Version: 3

Last Revision Date: 18/11/2024

Table of Contents

A. General information about the course:	3
B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods	4
C. Course Content	5
D. Students Assessment Activities	6
E. Learning Resources and Facilities	6
F. Assessment of Course Quality	7
G. Specification Approval	7



A. General information about the course:

1. Course Identification

1. Credit hours: 3 (2+1)

2. Course type

A. ☐ University ☐ College ☐ Department ☐ Track ☒ Program
B. ☒ Required ☐ Elective

3. Level/year at which this course is offered: (3rd Level / 2nd year)

4. Course general Description:

This course allow the student to identified the atomic theory of matter, learn different type of chemical bonding and reactions & understand some chemical equation and application as they are the backbone of the biochemistry and pharmacology. Also they can acquires basic skills in safe handling of equipment and reagents and can understand the basic principles in chemical laboratory techniques as the deal with medicine in the hospital.

5. Pre-requirements for this course (if any):

None

6. Co-requisites for this course (if any):

None

7. Course Main Objective(s):

Understand the basic concept of organic compounds which are the structural back bone of drugs.

Understand the stereochemical aspects of drugs in drug action.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	60	100
2	E-learning		
3	Hybrid <ul style="list-style-type: none"> Traditional classroom E-learning 		
4	Distance learning		



3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	30
2.	Laboratory/Studio	30
3.	Field	0
4.	Tutorial	0
5.	Others (specify)	0
Total		60

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

Code	Course Learning Outcomes	Code of PLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Describe the different aliphatic and aromatic organic compounds, and acquire the basic knowledge of their functional group chemistry, and synthesize and react with different aliphatic and aromatic organic compounds	K3	Lectures	Written exam
2.0	Skills			
2.1	Determine the functional groups of various medicinal active compounds	S1	Lectures	Written exam
2.2	Apply synthesis of various organic compounds	S1	Lectures	Written exam
2.3	Communicate clearly verbal and writing by knowing chemistry terminology	S5	Laboratory work	Practical exam Reports





Code	Course Learning Outcomes	Code of PLOs aligned with program	Teaching Strategies	Assessment Methods
3.0	Values, autonomy, and responsibility			
3.1	Work independently	V4	Group discussion	Assignments Observation cards

C. Course Content (theoretical)

No	List of Topics	Contact Hours
1.	Introduction of organic chemistry	2
2.	Alkanes and Cycloalkanes, Alkenes and Alkynes and Aromatic Compounds.	4
3.	Nucleophilic substitution and elimination reactions	3
4.	Stereoisomerism	2
5.	Alcohols, phenol and Ethers	6
6.	Carboxylic acid and derivative's	6
7.	Aldehyde and ketone	3
8.	Amides and Amines	4
Total		30

Course Content (Practical)

No	List of Topics	Contact Hours (P)
1.	Laboratory Safety	2
2.	Laboratory Work Instructions	2
3.	Alcohols Chemistry (Part I)	2
4.	Alcohols Chemistry (Part II)	2
5.	Phenols (Part I)	2
6.	Phenols (Part II)	2
7.	Aldehydes & Ketones Chemistry (Part I)	2
8.	Aldehydes & Ketones Chemistry (Part II)	2
9.	Carboxylic Acids Chemistry (Part I)	2
10.	Carboxylic Acids Chemistry (Part II)	2
11.	General Identification Scheme I	3
12.	General Identification Scheme II	3
13.	General Identification Scheme III	2



14.	Practical Exams (Sheet & Practical)	2
Total		30

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quizzes	5-6	10
2.	Midterm	7-9	20
3.	Assignment	13	5
4.	Observation card	1-14	5
5.	Practical reports	1-13	5
6.	Practical quiz	10	5
7.	Final Practical exam	16	10
8.	Final theoretical exam	17-19	40
9.	Total		100

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

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	T. W. Graham Solomons, Craig B. Fryhle, Scott A. Snyder-Organic Chemistry-Wiley (2013), 11 th edition. Robert Thornton Morrison, Robert Neilson Boyd, Organic Chemistry, 7th edition; Prentice Hall, 2010
Supportive References	T. W. Graham Solomons, Craig B. Fryhle, Scott A. Snyder-Organic Chemistry-Wiley (2013), 11 th edition. Lecture Handouts and Instructions
Electronic Materials	NU e-learning web site www.organic-chemistry.org/
Other Learning Materials	Microsoft word software. Microsoft PowerPoint software

2. Required Facilities and equipment





Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Suitable lecture room equipped with data show and internet and sufficient number of seats. Suitable laboratories equipped with health and safety tools, 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)	<ol style="list-style-type: none"> 1. Volumetric flasks of different volumes 2. Conical flasks 3. Burets 4. Water bath 5. Hot plates 6. Automatic pipettes 7. Ultrasonic instrument 8. pH meters

F. Assessment of Course Quality

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

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	Pharmaceutical Chemistry Department Council
REFERENCE NO.	4-1446
DATE	18/11/2024

