2023
TP-153

Course Specification
(Bachelor)

Course Title:	Organic Chemistry Lab
Course Code:	CHEM235-2
Program:	Bachelor of Science in Chemistry
Department:	Department of Physical Sciences
College:	College of Science
Institution:	Jazan University
Version:	TP-153 (2024)
Last Revision Date:	31 January 2024

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: (2 hrs)

2. Course type

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

3. Level/year at which this course is offered: (4th Level/ 2nd Year.)

4. Course general Description:

Course title	Course code	Contact Hours			Credit Hours	Year	Level	Prerequisite	Corequisite
		Lec	Tut	Lab					
Organic Chemistry Lab	CHEM 235-2	0	0	4	2	2nd	4th	----	CHEM 234-3

This course aims to provide the student with the skills to detect and identify unknown organi compounds, whether they are free or present in mixtures.

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

Non

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

CHEM234-3

7. Course Main Objective(s):

1. Training on laboratory detection of the elements that is present in the unknown organi compound.
2. Identifying the functional groups contained in the unknown organic compound.
3. Preparing some derivatives of the unknown compound.
4. Separating organic mixtures and identifying their components.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	60	100%
2	E-learning		
3	Hybrid • Traditional classroom		

No	Mode of Instruction	Contact Hours	Percentage
	• E-learning		
4	Distance learning		

3. Contact Hours (based on the academic semester)

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

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;** *Upon completion of the course, students are able to:*			
1.1	**Define the safety rules in an organic lab, tools, terminology of experimental knowledge, reactions of alcohols, aldehydes, ketones, carboxylic acids, salt of acids, amides, imides, amines and carbohydrates (I).**	**K1**	**lab demonstrations, whole group and small group discussion**	**Objective questions, Essay Questions**
1.2	**Describe and explain identification methods of different organic molecules, detect elements and functional groups contained in organic molecules.**	**K2**	**lab demonstrations, whole group and small group discussion**	**Objective questions, Essay Questions**
2.0	**Skills;** *Upon completion of the course, students are able to:*			
2.1	**Design of methods of investigation and identification of unknown organic compounds as well as separation and identification of mixture components. (I)**	**S1**	**lab demonstrations, whole group and small group discussion**	**Objective questions, Essay Questions**
2.2	**Perform experiments to prepare derivatives of organic compounds.**	**S2**	**lab demonstrations, whole group and small group discussion**	**Objective questions, Essay Questions**

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
2.3	Classify and assess laboratory hazards, practice risk minimization, and conduct safe laboratory practices.	S4	lab demonstrations ,whole group and small group discussion	Objective questions, Essay Questions

C. Course Content

No	List of Topics	Contact Hours
1.	General Safety Rules, Lab Equipment, Laboratory techniques and Physical parameters determination.	4
2.	Identification of hydrocarbons and alcohols	4
3.	Identification of aldehydes, ketones, phenols	4
4.	Identification of carboxylic acid and its salts, amides and imides	8
5.	Identification of amines and its salts and carbohydrates	6
6.	Lassaigne's Test(Element test)and pre-tests for investigation	4
7.	Investigation and identification of compounds containing C, H, O.	6
8.	Investigation and identification of compounds containing C, H, O, N.	8
9.	Midterm Exam	4
10	Investigation and identification of compounds containing C, H, O,Cl, N and C,H,O,N,S.	4
11	Separation of acid-acid, acid-base, acid-phenol, base-phenol mixtures	4
12	Separation of acid-neutral and base-neutral mixtures	4
Total		60.

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	*Periodic Exams*	*During semester*	*25%*
2.	*Lab work*	*During semester*	*35%*
6.	*Final Exam*	*16*	*40%*
	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	**1.The Systematic Identification of Organic Compounds, Ralph L. Shriner, Christine K. F. Hermann, Terence C. Morrill, David Y. Curtin, WILEY JOHN WILEY & SONS. INC. 9th Edition, 2023.**
Supportive References	***Vogel's textbook of practical organic chemistry, A. Vogel, A. Tatchel, B. Furnis, A. Hannaford, and P. Smith, 5th Ed., Prentice Hall, 1996.***
Electronic Materials	• ***https://chem.libretexts.org*** **http://orgchem.colorado.edu/hndbksupport/ochemlabtech.html**
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Lab room for a group of 25 student
Technology equipment (projector, smart board, software)	Smartboard, Data show, Blackboard, Internet
Other equipment (depending on the nature of the speciality)	Power source, Balance, water bath, R.B flasks different sizes, Test tubes, Condensers different sizes

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Student	Likert-type Survey CES) Indirect
Effectiveness of Students' assessment	Instructor & Course Coordinator	Classroom evaluation (direct & indirect
Quality of learning resources	Program Coordinator	Indirect
The extent to which CLOs have been achieved	Assessment committee	Indirect
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	Physical Sciences Department Council
REFERENCE NO.	Meeting (3)
DATE	12/03/2024 -02/09/1445