2023
TP-153

Course Specification
(Bachelor)

Course Title:	*Organic Chemistry*
Course Code:	*CHM 1301*
Program:	*Chemistry*
Department:	*Chemistry*
College:	*Science*
Institution:	*Imam Mohammad Ibn Saud Islamic University*
Version:	**3**
Last Revision Date:	**7 October 2024**

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: (3)					
3 credit hours + 1 tutorial					
2. Course type					
A.	☐University	☐College	☒ Department	☐Track	☐Others
B.	☒ Required		☐Elective		
3. Level/year at which this course is offered: (3th level / 2nd year)					
4. Course general Description:					
Electronic structure and bonding. Acids and bases. An introduction to organic compounds: Nomenclature, physical properties, and representation of structure. Alkenes: Structure, nomenclature, and an introduction to reactivity. Thermodynamics and kinetics and reactions of alkenes. Reactions of alkynes. Introduction to multistep synthesis. Electron delocalization and resonance. Reactions of dienes. Introduction of alkyl halides and its reaction.					
5. Pre-requirements for this course (if any)**:**					
CHM 1104 General Chemistry					
6. Co-requirements for this course (if any)**:**					
7. Course Main Objective(s):					
a. At the end of the course each student should be able to: b. Correctly name any organic compound using IUPAC nomenclature, or, given an IUPAC name, depict the molecular structure. c. Account for the physical properties and chemical reactivity of any organic compound on the basis of molecular structure. d. Predict the outcome of an organic reaction, given the identities of the reactants, or provide the reagents given the starting materials and products. e. Recognize important substances and chemical processes which have practical applications in household, laboratory, industry, and medicine.					

2. Teaching mode (mark all that apply)

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

No	Mode of Instruction	Contact Hours	Percentage
3	Hybrid • Traditional classroom • E-learning		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	45
2.	**Laboratory/Studio**	
3.	**Field**	
4.	**Tutorial**	15
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**			
1.1	Name any organic compound using IUPAC nomenclature, or, given an IUPAC name, depict the molecular structure	K.1		• HomeWork • Quizzes • Exams
1.2	Discuss the bonding properties of carbon which cause it to be present in such a large number and variety of important compounds.	K.1		
1.3	Appreciate the use of theories (models) of varying complexity to rationalize chemical structure and reactivity	K.1		
1.4	Explain the relationship between structure and physical and chemical properties and to make predictions concerning these properties	K.1		
2.0	**Skills**			
2.1				
...				
3.0	**Values, autonomy, and responsibility**			
3.1				

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
...				

C. Course Content

No	List of Topics	Contact Hours
1	Structure and Bonding	2
2	Covalent Bond, Acids and Bases	2
3	Organic Compounds: Alkanes	4
4	Organic Compounds: Cycloalkanes	4
5	Overview Organic Reactions	4
6	Alkenes: Structure and Reactivity	4
7	Alkenes: Synthesis and Reactions	4
8	Alkynes	4
9	Reactions of Alkylhalides	4
10	Benzene, aromaticity, and its chemistry	8
11	Alcohols and Phenols	4
12	Ethers and Epoxides	4
13	Aldehydes and Ketones.	4
14	Carboxylic Acids	4
15	Amines	4
Total		60

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quizzes & Homeworks	TBA	10
2.	Midterms 1	#6	20
3.	Midterms 2	#13	20
4.	Project	TBA	10
5.	Final Exam	#16	40

*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	Organic Chemistry by John McMurry, 7th Edition, THOMSONS / BROOKS COLE
Supportive References	- Morrison, R. T.; Boyd, R. N. "Organic Chemistry", 6th edition, Prentice Hall of India, (1996). - Morrison, R. T.; Boyd, R. N. "Organic Chemistry", 6th edition, Prentice Hall of India, (1996). - Organic Chemistry. G. Marc loudon, Fourth Edition. - Organic Chemistry I For Dummies, by Arthur Winter. July (2008). - Organic Chemistry I, by David R. klein. 2end edition June, (2007.) - Solomons Organic chemistry. Organic chemistry (schmid).
Electronic Materials	http://www.cengage.com/search/productOverview.do?Ntt=mcmurry||9780495112587&N=16&Ntk=all%7C%7CP_Isbn13
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Lecture classrooms should be large enough to accommodate 25 students or more
Technology equipment (projector, smart board, software)	computer - projector system- smart board, polymath software, internet in the classroom for both Instructors and Students
Other equipment (depending on the nature of the specialty)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Survey (direct)
Effectiveness of Students' assessment	Students	Survey (direct)
Quality of learning resources	Students	Survey (direct)
The extent to which CLOs have been achieved	Faculty	CLO-KPI analysis (direct)
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	Department of Chemical Engineering
REFERENCE NO.	Department Meeting # 4
DATE	5/4/1446H - 8/10/2024 G