

University of Petra		
Faculty of Arts and Sciences		كلية الآداب والعلوم
Department of Chemistry		قسم الكيمياء

Course Syllabus

Year: 2019/2020

Semester: first

Course No.	Course Title	Prerequisite	Co-requisite	Credit Hours Lab./ European Credit Transfer System (ECTS)
101115	Organic Chemistry for Medical Students	101102/101103	-	3/6

Instructor Name	E-mail	Office No.	Office Ext.	Office Hours
Dr. Nuha Sweidan	nswweidan@uop.edu.jo	7205	7205	Sun, Tue, Thu 11.00 – 12.00

Course Description	Classification of organic compounds, chemical bonding, hydrocarbons; alkanes, alkenes, alkynes, cycloalkanes and aromatics; stereochemistry, alkylhalides, alcohols, phenols, ethers, epoxides, aldehydes, ketones, amines, carboxylic acids and derivatives.
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Course Objectives

- To instill in students a sense of enthusiasm for organic chemistry, an appreciation of its application in different contexts and to involve them in an intellectually stimulating and satisfying experience of learning and studying.
- To develop in students the ability to apply their chemical knowledge and skills to the solution of theoretical and practical problems in chemistry.
- To provide students with a knowledge and skills base from which they can proceed to further studies in specialized areas of organic chemistry or multi-disciplinary areas involving organic chemistry.
- To generate in students an appreciation of the importance of organic chemistry in an industrial, economic, environmental and social context.

Course Intended Learning Outcomes (ILOs) and their Alignment with Program ILOs:

Upon successful completion of this course, students are expected to achieve the following learning outcomes:

A - Knowledge and Understanding:

This course will ensure that students become conversant with the following main aspects of organic chemistry:

1. Major aspects of chemical terminology and classifications of organic compounds.
2. Nomenclature of organic compounds either by common names or systematic (IUPAC) names.
3. Major functional groups in organic chemistry and their classification.

B- Intellectual skills – with ability to:

This course will ensure that students become conversant with the following main aspects of chemistry:

4. The nature and behavior of functional groups in organic reactions.

C- Subject specific skills

This course will ensure that students become conversant with the main aspects of all 5 ILOs:

D- Transferable skills

5. Evaluation, interpretation and analyses of chemical information and data obtained from reactions mechanisms.

Course Schedule:

Week	Topics	Topic Details	Reference
1	Bonding and Isomerism	Ionic and Covalent Bonding; Hybridization and Carbon-Carbon Bonds and Isomerism; Formal Charge.	Chapter 1
2	Alkanes and cycloalkanes.	Structure of Alkanes and Cycloalkanes; Nomenclature of Alkanes and Cycloalkanes; Reactions of Alkanes and Cycloalkanes.	Chapter 2
3	Alkenes and alkynes	Structure of Alkenes and Alkynes; Nomenclature of Alkenes and Alkynes; E-Z Convention for Cis-Trans Isomers; Reactions of Alkenes and Alkynes.	Chapter 3
4	Aromatic compounds	Structure of Benzene; Nomenclature of Aromatic Compounds; Electrophilic Aromatic Substitution.	Chapter 4
5	Stereoisomerism	Chirality and Enantiomers; R-S Convention for Chiral Centers; Polarized Light and Optical Activity; Diastereomers and Meso Compounds.	Chapter 5
6	Organic Halogen compounds	Nucleophilic Substitution Reactions; S _N 2 and S _N 1 Mechanisms; Elimination Reactions; E2 and E1 Mechanisms.	Chapter 6
7	Alcohols, phenols and thiols	Nomenclature of Alcohols; Acidity and Basicity of Alcohols and Phenols; Reactions of Alcohols and Phenols; Thiols.	Chapter 7
8	Ethers and Epoxides	Nomenclature of Ethers; Preparation of Ethers; Epoxides (Oxiranes); Reactions of Ethers and Epoxides.	Chapter 8
9	Aldehydes and Ketones	The Carbonyl Group; Nomenclature of Aldehydes and Ketones; Preparation of Aldehydes and Ketones; Reactions of	Chapter 9

		Aldehydes and Ketones.	
10	Carboxylic acids and their derivatives	Nomenclature of Carboxylic Acids; Preparation of Carboxylic Acids; Physical and Chemical Properties of Carboxylic Acids; Carboxylic Acid Derivatives.	Chapter 10
11	Amines and related nitrogen compounds	Nomenclature of Amines; Preparation of Amines; Aromatic Diazonium Compounds.	Chapter 11

Assessment Methods:

Assessment method	Grade	Comments
First Exam	25	(Mon) 28/3/2016
Second Exam	25	(Thu) 12/5/2016
Attendance & contributions	10	Every Lecture
Final Exam	40	Set by Registrar
Total	100	

Alignment of Teaching and Learning Methods, Assessment and Course ILOs:

Teaching method	Contact Hours	Assessed through	ILOs numbers
Lectures	40	Exams and Quizez	All ILOs

Learning References:

1- Textbook (s): Organic Chemistry A Brief Course, by Hart; Hadad; Craine and Hart; 13th ed, 2012. Books/Cole, Cengage Learning.
2- References: Any Organic Chemistry Book.
3- Other Resources: Power point slides supplied by the instructor.

Course Policies:

- **Attendance Policy:** University regulations apply to attendance.
- **Academic Honesty:** Academic dishonesty is an unacceptable mode of conduct, and will not be tolerated in any form at University of Petra. All persons involved in academic dishonesty and plagiarism in any form will be disciplined in accordance with University rules and regulations.

Approved by	Name	Date	Signature
Head of Department	Dr. Abdelmnim Altwaiq	14/10/2020	
Faculty Dean	Dr. Rami Abdulrahim	14/10/2020	