

University of Petra		 جامعة البترا - خمسة وعشرون عاما University of Petra Anniversary
College of Arts and Sciences		
Department of Chemistry		
		كلية الآداب والعلوم قسم الكيمياء

Course Syllabus

Year : 2019/2020

Semester: 2019I

Course No.	Course Title	Prerequisite	Co-requisite	Credit hours Lectures / Lab.	ECTS: European Credit Transfer System
101311	Organic Chemistry (3)	101212	-	3/0	5

Instructor Name	E-mail	Office No.	Office Ext.	Office Hours
Dr. Ahmad Daraosheh	adaraosheh@uop.edu.jo	7117	7117	Sun. 12:00-14:00 Mon. 9:30 – 11:00 Tue. 11:00-12:00 Thurs. 11:00-12:00

Coordinator's Name: (if applicable)	Dr. Nabil Eldurini
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Course Description	Carboxylic Acid Derivatives; Carbanions and Enolate Anions; Amine and Heterocycles; Pericyclic Reactions; Polynuclear Aromatic Hydrocarbons; Heterocyclic Compounds.
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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:

Course ILOs	Program ILOs	Teaching and Learning Method	Assessment Method
Knowledge and Understanding (K)			
1. Recall major principles and concepts in organic chemistry.	K1	Lectures using data show and Models	Quizzes and Exams
2. Name organic compounds either by common names or systematic (IUPAC) names	K2	Lectures using data show and Models	Quizzes and Exams
Intellectual Skills (I)			
1. Use previous knowledge to identify selected chemical reactions important in organic synthesis.	I1	Lectures using data show	Quizzes and Exams

2. Identify reactants and reagents and their role in an organic reaction.	I2	Lectures using data show	Quizzes and Exams
3. Correlate reaction mechanism with products and conditions used in a chemical reaction.	I1	Lectures using data show	Quizzes and Exams

Course Schedule:

Week	Topic Details	Course ILO number	Reference
1, 2	Carboxylic Acid Derivatives: Naming carboxylic acid derivatives; Preparation of carboxylic acid derivatives; Nucleophilic acyl substitution reactions of carboxylic acid derivatives.	K1, K2, K3, I2, I3	Chapter 21
3, 4, 5	Carbonyl Alpha-Substitution Reactions: Keto-Enol tautomerism; Reactivity of enols; Alpha halogenation of methyl carbonyl compounds; Acidity of alpha hydrogen atoms; Reactivity and alkylation of enolate ions: Malonic ester synthesis and Acetoacetic ester synthesis.	K1, I2, I3	Chapter 22
6, 7	Carbonyl Condensation Reactions: Aldol reaction; Claisen condensation reaction; conjugate carbonyl addition: Michael reaction; Stork reaction; Robinson annulation reaction.	K1, I2, I3	Chapter 23
8, 9	Amines and Heterocycles: Nomenclature; Basicity of amines; Synthesis and reactions of amines.	K1, K2, I2, I3,	Chapter 24
10, 11	Orbitals and Organic Chemistry: Pericyclic reactions: Electrocyclic reactions; Cycloaddition reactions; Sigmatropic reactions	K1, I2, I3	Chapter 30
12, 13, 14	Chemistry of Naphthalene and the Aromatic Heterocycles: Nomenclature of polycyclic aromatic hydrocarbons; Reactions of naphthalene; Nomenclature of aromatic heterocycles; Properties of aromatic heterocycles; Reactions of aromatic heterocycles.	K1, K2, I2, I3,	Notes sheet

Learning References:

- 1- Textbook (s): Organic Chemistry, by John E. McMurry. 9th Ed, 2016, 2012, Cengage Learning.
- 2- References: 1- Organic Chemistry, G. M. Loudon; 2- Organic Chemistry, Morrison and Boyd.
- 3- Other Resources: Power point slides supplied by the instructor.

Assessment Methods:

Assessment method	Grade	Comments
First Exam	25	(Tue) 19/11/2019 10.00-11.00
Second Exam	25	(Tue) 24/12/2019 10.00-11.00
Quizez	10	Weeks 5, 10
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	42	Exams	All ILOs

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 Al Tweiq	24/10/2019	
Faculty Dean	Prof. Rami Abdulrahim	24/10/2019	