

Course E-Syllabus

1	Course title	Organic chemistry
2	Course number	3325055
3	Credit hours	3
	Contact hours (theory, practical)	3,3
4	Prerequisites/corequisites	5502102-5502101
5	Program title	Bachelor Program in Biological sciences
6	Program code	
7	Awarding institution	Jordan university
8	School	Basic and Marine Sciences
9	Department	Biological sciences
10	Level of course	second year
11	Year of study and semester (s)	2020-2021 First semester
12	Final Qualification	Bachelor
13	Other department (s) involved in teaching the course	
14	Language of Instruction	English
15	Teaching methodology	<input type="checkbox"/> Blended <input checked="" type="checkbox"/> Online
16	Electronic platform(s)	<input checked="" type="checkbox"/> Moodle <input checked="" type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input type="checkbox"/> Zoom <input type="checkbox"/> Others...messenger.....
17	Date of production/revision	

18 Course Coordinator:

Name: Rana Al-Momani
Office number: 345
Phone number: 032090450-25076
Email: r_almomani@ju.edu.jo

19 Other instructors:

Name:
Office number:
Phone number:
Email:

Name:
Office number:
Phone number:
Email:

2. Course Description:

As stated in the approved study plan.

Structure and bonding, Bonding and molecular properties, the nature of organic compounds: Alkanes and cycloalkanes, Stereochemistry of alkanes and cycloalkanes, An overview of organic reactions, alkanes: Structure and reactivity, alkenes: Reactions and synthesis, Alkynes, Stereochemistry, Alkyl halides. Reactions of alkyl halides: Nucleophilic substitution and eliminations reaction

2.1 Course aims and outcomes:

A- Aims:

Learning objectives during Organic Chemistry include student understanding of: 1. The geometries and structures of carbon-based compounds, the tetra valence of carbon atoms, and the local geometries that result from sp, sp², and sp³ hybridization. 2. The common and important functional groups in organic compounds. 3. The composition and structures of hydrocarbon compounds and geometric isomerism. 4. Stereoisomerism; chirality of tetra-substituted carbon atoms; R and S enantiomers; and diastereoisomerism. 5. The standard organic chemistry reaction mechanisms: substitution, elimination, and addition reactions. 6. The preparation, structures, and reactions of alkyl halide compounds. The reactivity of electron deficient carbons. Nucleophilicity and structures of nucleophiles. 7. The preparation, structures, and reactions of alkene and alkyne compounds.

B- Intended Learning Outcomes (ILOs):

Upon successful completion of this course students will be able to ...

- 1- remember General chemistry: the structure of an atom, electronic configuration, ionic and covalent bonds Lewis structures, formal charge, atomic orbital and hybridization.
- 2- distinguish between the acids and the bases, understanding the factors that determine acid strength.
- 3- Name by the IUPAC system any saturated hydrocarbon whose parent chain contains 10 or fewer carbon atoms and no more than two simple rings (or sketch the hydrocarbon given its IUPAC).
Describing (graphically and verbally) the relation between conformation and potential energy for ethane, propane and butane and closely related compounds (Newman projections) and drawing the chair conformer of cyclohexane.
- 4- Determine the configuration (R or S) of any chiral center .drawing, distinguishing between the isomers (cis- trans isomers and isomers that contain asymmetric centers) .
- 5- Name any alkene whose parent chain is 10 carbons or less by the IUPAC system , writing the mechanism for electrophilic addition reaction and describing the energy changes that take place during reaction
- 6- Predict the product(s) obtained from the addition reactions of alkenes and alkynes and predicting the stereoisomers obtained from the addition reactions of alkenes.
- 7- Introduction to some synthetic methods in organic chemistry, involving functional group interconversions
- 8- Explain the experimental basis for the concept of resonance or aromaticity, i.e. the differences in properties between aromatic and similar non-aromatic compounds and Explain the unusual stability of conjugated double bond systems
- 9- Define and use correctly the terms SN2 and SN1
- 10- Define and use correctly the terms E2 and E1.

५५. Topic Outline and Schedule:

Week	Lecture	Topic	Teaching Methods*/platform	Evaluation Methods**	References
1	1.1	Chapter 1 Introduction Remembering General Chemistry: Electronic Structure and Bonding	Synchronous lecturing (Microsoft teams)		Organic Chemistry, Paula Yurkanis Bruice ,seventh Edition
	1.2		=		
	1.3		=		
2	2.1	Chapter 2 Acids and Bases: Central to Understanding Organic Chemistry	=		
	2.2		=		
	2.3		=		
3	3.1	Chapter 3 An Introduction to Organic Compounds:	=	H.W	
	3.2		=		
	3.3		=		
4	4.1	Chapter 4 Isomers: The Arrangement of Atoms in Space	=		
	4.2		=		
	4.3		=		
5	5.1	Chapter 5 Alkenes: Structure, Nomenclature, and an Introduction to Reactivity • Thermodynamics and Kinetics	=	Quiz	
	5.2		=		
	5.3		=		
6	6.1		=	Midterm	
	6.2	Chapter 6 The Reactions of Alkenes •The Stereochemistry of Addition	=		

		Reactions			
	6.3	=	=		
7	7.1	Chapter 6 The Reactions of Alkenes • The Stereochemistry of Addition Reactions	=		
	7.2	=	=		
	7.3	Chapter 7 The Reactions of Alkynes An Introduction to Multistep Synthesis	=		
8	8.1	Chapter 7 The Reactions of Alkynes An Introduction to Multistep Synthesis	=	Quiz	
	8.2	=	=		
	8.3	=	=		
9	9.1	Chapter 8 Delocalized Electrons and Their Effect on Stability, pKa, and the Products of a Reaction	=		
	9.2	=	=		
	9.3	=	=		
10	10.1	Chapter 9 Substitution Reactions of Alkyl Halides	=	Quiz	
	10.2	=	=		
	10.3	=	=		
11	11.1	Chapter 10 Elimination Reactions of Alkyl Halides • Competition Between Substitution and Elimination	=		
	11.2	=	=		
	11.3	=	=		
12	12.1	=	=		

	12.2	=	=		
	12.3	=	=		

- Teaching methods include: Synchronous lecturing/meeting; Asynchronous lecturing/meeting
- Evaluation methods include: Homework, Quiz, Exam, pre-lab quiz...etc

۲۳ Evaluation Methods:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	Period (Week)	Platform
H.W	10	Chapter 1,2	3	Moodle
Quiz	10	Chapter 3,4	5	=
Midterm Exam	30	Chapter 1-5	6	=
Quiz	10	Chapter 6.7	8	=
Quiz	10	Chapter 8,9	10	=

۲۴ Course Requirements (e.g: students should have a computer, internet connection, webcam, account on a specific software/platform...etc):

students should have a computer and internet connection

۲۵ Course Policies:

A- Attendance policies:

Attendance at lecture is very important; attendance may be taken at the beginning of class sessions. For absences beyond six (6) a student will automatically be withdrawn from the class. It is not academically sound to allow a student to continue after these many absences

B- Absences from exams and submitting assignments on time:

Absences from exams and handing in assignments on time:

Absences will be excused only if they are due to a religious holiday, serious illness, and death in the student's immediate family, if an exam has been missed then I will use my discretion in how a grade will derived including the possibility of a make-up exam. Absences due to any other reasons than those listed above will be considered unexcused.

C- Health and safety procedures:

Academic dishonesty including, but not limited to cheating, plagiarism, and misbehavior shall be treated appropriately.

Please read at <http://ju.edu.jo/ar/arabic/Pages/regulations.aspx>

D- Honesty policy regarding cheating, plagiarism, misbehavior:

E- Grading policy:

The grading scheme is as follows:

General work; Quizzes, homework	20%
Midterm Exam	30%
Final Exam	50%

F- Available university services that support achievement in the course:

٢٦ References:

A- Required book(s), assigned reading and audio-visuals:

Organic Chemistry, Paula Yurkanis Bruice ,seventh Edition

B- Recommended books, materials and media:

٢٧ Additional information:

Name of Course Coordinator: -----Signature: ----- Date: -----

Head of Curriculum Committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of Curriculum Committee/Faculty: ----- Signature: -----

Dean: ----- Signature: -----

