

General information	
Academic subject	Organic Chemistry
Degree course	<i>Food Science and Technology (L26)</i>
Academic Year	<i>First</i>
European Credit Transfer and Accumulation System (ECTS)	3 ECTS
Language	<i>Italian</i>
Academic calendar (starting and ending date)	<i>October 17th, 2022 – February 10th, 2023</i>
Attendance	<i>No Compulsory</i>

Professor/ Lecturer	
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Department and address	<i>DiSSPA</i>
Virtual headquarters	<i>Microsoft Teams</i>
Tutoring (time and day)	Monday, on appointment

Syllabus	
Learning Objectives	The main objective of the course is to provide the student with the basic knowledge on the structure and properties of the principal organic compounds and molecules of biological interest, towards applications to food chemistry.
Course prerequisites	
Contents	<p>Representing organic molecules; resonance structures.</p> <p>Alkanes: structure, isomerism, nomenclature, properties, reactivity; cycloalkanes: structure, conformations, cis-trans isomerism, nomenclature.</p> <p>Alkenes: structure, isomerism, nomenclature, properties, reactivity: electrophilic addition; polyenes.</p> <p>Alkynes: structure, nomenclature.</p> <p>Stereoisomerism and Enantiomerism.</p> <p>Aromatic compounds: structure, nomenclature, properties, reactivity: electrophilic aromatic substitution; benzene and its derivatives; polycyclic aromatic hydrocarbons; heterocyclic aromatic compounds.</p> <p>Alcohols, thiols, phenols, ethers: structure, nomenclature, properties.</p> <p>Amines: structure, nomenclature, properties.</p> <p>Carbonyl compounds (aldehydes, ketones, carboxylic acids, acyl halides, esters, amides, anhydrides): structure, nomenclature, properties, reactivity.</p>
Books and bibliography	<ul style="list-style-type: none"> W.H. Brown, T. Poon, Introduction to Organic Chemistry, 6th edition, John Wiley and Sons Inc.
Additional materials	Notes, slides and other bibliographic materials will be furnished during the course

Work schedule			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/Self-study hours
Hours			
75	16	14	45
ECTS			

3	2	1
Teaching strategy	<i>Course contents will be presented through PowerPoint, blackboard and multimedia tools.</i>	
Expected learning outcomes	The expected learning outcomes, in terms of both knowledge and skills, are provided in Annex A of the Academic Regulations of the Degree in Food Science and Technology (expressed through the European Descriptors of the qualification)	
Knowledge and understanding on:	<ul style="list-style-type: none"> ○ Basic knowledge of the structure, properties and reactivity of the main classes of organic molecules of relevance in food science; understanding the relationship between chemical structure and reactivity useful to the interpretation of biological and technological processes of food transformation 	
Applying knowledge and understanding on:	<ul style="list-style-type: none"> ○ Ability to utilize chemical knowledge to understand and apply correctly transformation, storage and distribution procedures related to food and beverage 	
Soft skills	<p><i>Making informed judgements and choices</i></p> <ul style="list-style-type: none"> ○ Awareness and autonomy of judgment in using chemical knowledge in the subsequent courses <p><i>Communicating knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ Ability to name and describe the structure, properties and reactivity of the main classes of organic molecules of biological and food interest <p><i>Capacities to continue learning</i></p> <ul style="list-style-type: none"> ○ Ability to deepen and update the knowledge about the chemical and chemical-physical processes in the agri-food sector 	
The expected learning outcomes, in terms of both knowledge and skills, are provided in Annex A of the Academic Regulations of the Degree in Food Science and Technology (expressed through the European Descriptors of the qualification).		

Assessment and feedback	
Methods of assessment	<p>The exam consists of a written test and an oral dissertation on the topics developed during the theoretical and theoretical-practical lectures in the classroom, as reported in the Academic Regulations for the Bachelor Degree in Food Science and Technology (article 9) and in the study plan (Annex A). Students attending the lectures may have a middle-term preliminary exam, consisting of a written test, relative to the first part of the program, which will concur to the final evaluation.</p> <p>The evaluation of the preparation of the student occurs on the basis of established criteria, as detailed in Annex B of the Academic Regulations for the Bachelor's degree in food science and Technology.</p>
Evaluation criteria	<p><i>Knowledge and understanding</i></p> <ul style="list-style-type: none"> • Knowledge of the structure of the main classes of organic molecules and of their properties and reactivity <p><i>Applying knowledge and understanding</i></p> <ul style="list-style-type: none"> • Understanding the basic principles of organic chemistry for applications in food science <p><i>Making informed judgements and choices</i></p> <ul style="list-style-type: none"> • Making correct hypotheses on the products, energy and kinetics of chemical processes involving organic molecules <p><i>Communicating knowledge and understanding</i></p> <ul style="list-style-type: none"> • Describing the structure and properties of the main organic molecules of biological and food relevance <p><i>Capacities to continue learning</i></p>

	<ul style="list-style-type: none"> Ability to understand phenomena related to the transformation and conservation of food
Criteria for assessment and attribution of the final mark	The evaluation criteria that contribute to the attribution of the final mark will be: knowledge and understanding, the ability to apply knowledge, autonomy of judgment, i.e. the ability to criticize and formulate judgments, communication skills.
Additional information	