

General information	
Academic subject	Organic Chemistry <i>The course is one of the two modules of the integrated "Chemistry" course (12 Cfu).</i>
Degree course	Bachelor degree in Natural Science
Academic Year	first year
European Credit Transfer and Accumulation System (ECTS)	6Cfu
Language	Italian
Academic calendar (starting and ending date)	second semester (March 2022 - June 2022)
Attendance	Strongly recommended

Professor/ Lecturer	
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Department and address	Chemistry Department, Bari
Virtual headquarters	Microsoft Teams (course: cod. nen60vr; tutorial activity: cod. 9s36m98; exams: cod. vczynpy).
Tutoring (time and day)	Thursday 11-13, Friday 11-13 or other days/times agreed by phone or e-mail between teacher and student. The tutorial activity takes place in the room N 207 of the Chemistry Department or on Microsoft Teams platform (cod. 9s36m98).

Syllabus	
Learning Objectives	The Organic Chemistry course contributes to providing multidisciplinary knowledge preparatory to the acquisition of strictly naturalistic skills for the training of experts in natural ecosystems and environmental impact on them.
Course prerequisites	Knowledge of General Chemistry.
Contents	Basic concepts of General Chemistry. Structure, nomenclature, chemical-physical properties and reactivity of the main classes of organic compounds: Alkanes, Alkenes, Alkynes, Alkyl halides, Alcohols, Thiols, Arenes, Amines, Aldehydes and ketones, Carboxylic acids, Acyl derivatives (esters, acyl chlorides, anhydrides and amides). Structure and chemical-physical properties of the main classes of natural compounds: Lipids, Carbohydrates, Nucleic acids, Proteins. Exercises in the classroom: carrying out exercises aimed at understanding and deepening concepts and notions acquired through frontal teaching. Laboratory exercises: carrying out exercises (extraction and analysis of pigments extracted from spinach leaves, preparation of soap from olive oil) aimed at the application and deepening of theoretical concepts.
Books and bibliography	W. Brown & T. Poon, Introduzione alla Chimica Organica, EdiSES. This text is available for consultation in University Libraries.
Additional materials	The recommended text must be integrated with teaching material provided by the lecturer.

Work schedule			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours

Hours			
150	36	22,5	91,5
ECTS			
	4,5	1,5	
Teaching strategy	<i>Frontal lessons with the use of the blackboard and multimedia projections. Students are encouraged to work in groups during classroom and laboratory exercises in order to develop critical and self-assessment skills. The teaching course is not delivered in e-learning modality.</i>		
Expected learning outcomes			
Knowledge and understanding on:	<i>The student should acquire the knowledge concerning the structure and chemical-physical properties of the main classes of organic compounds and the mechanisms of chemical transformations. This knowledge, also useful for dissemination and educational purposes, will be acquired through lessons.</i>		
Applying knowledge and understanding on:	<i>The student should acquire the ability to apply the concepts learnt through lectures to the understanding of the chemical and biochemical processes that occur in the natural environment. These skills will be acquired through frontal teaching but also through exercises in the classroom and in the laboratory: the student will be actively involved in the resolution of exercises and in carrying out practical laboratory short training based on theoretical notions. The student will be invited to compare the different interpretative or summary proposals related to specific topics developed during the lesson.</i>		
Soft skills	<ul style="list-style-type: none"> • <i>Making informed judgments and choices</i> <i>At the end of the course, the student must be able to have autonomy in relation to the evaluation and the interpretation of scientific data related to Organic Chemistry. This capacity will be developed through exercises in the classroom and in the laboratory and through discussion between students and the lecturer during the exercises. Students will be invited to autonomously comment on concepts learnt through lessons and exercises.</i> • <i>Communicating knowledge and understanding</i> <i>At the end of the course, the student must be able to use adequate vocabulary and terminology related to Organic Chemistry in order to understand the bibliography of this scientific sector, as well as to transfer and disseminate their knowledge in different fields (from schools of all levels to tertiary activities such as publications and tourism). The student will be stimulated to autonomously comment on theoretical concepts learnt in class, to participate actively in the discussion and resolution of exercises during the classroom exercises and expose to colleagues the result of the application of theoretical concepts.</i> • <i>Capacities to continue learning</i> <i>At the end of the course, the student must be able to use the knowledge of Organic Chemistry as a base for understanding other disciplines of its degree course. The student will acquire the ability to deepen the discipline by consulting texts and databases. A discussion between students and the lecturer during exercises in the classroom and in the laboratory aimed at in-depth studies will be used to develop these skills.</i> 		
Assessment and feedback			
Methods of assessment	<i>The method for evaluating of the learning process is oral and involves an interview on the general contents of the course together with the resolution of simple exercises. To achieve sufficiency the student must demonstrate</i>		



	<p><i>knowledge of the main classes of organic compounds as well as their nomenclature, physical properties and reactivity. An adequate capacity for argumentation and presentation will also contribute to the formulation of the overall vote.</i></p>
Evaluation criteria	<ul style="list-style-type: none">• <i>Knowledge and understanding</i> The student must demonstrate to know all the contents of the course. Knowledge of functional groups that characterize the main classes of organic compounds, the correlation between functional groups and physical and chemical properties, as well as basic concepts such as hybridization, resonance, acid-basic properties are the core of the course. Moreover, the student must demonstrate knowledge of the nomenclature of the main classes of organic compounds and the main reaction mechanisms. Knowledge of these topics is needed to pass the exam.• <i>Applying knowledge and understanding</i> The student must be able to apply the basics for understanding the structural properties and reactivity of each class of organic compounds. He must also demonstrate that he is able to apply the IUPAC nomenclature rules. These skills are needed to pass the exam.• <i>Autonomy of judgment</i> In addition to the acquisition of the concepts acquired through lectures and exercises, the student must demonstrate a personal argumentative and critical ability. In this way the student can pass the exam with a very positive assessment.• <i>Communicating knowledge and understanding</i> The student must communicate knowledge and understanding by an adequate scientific language. This ability allows access to a positive assessment.• <i>Communication skills</i> The ability to answer questions by expressing concepts using appropriate scientific terminology will be assessed very positively. This ability, together with the previous ones, guarantees a positive assessment of the student's preparation and performance, allowing access to a very positive assessment with the possibility of achieving the maximum grade.• <i>Capacities to continue learning</i> The student will have to demonstrate that he is able to independently obtain new knowledge by consulting texts or databases in order to discuss simple problems concerning Organic Chemistry. The acquisition of these skills will produce a highly positive assessment of the final exam with the possibility of achieving the maximum grade.
Criteria for assessment and attribution of the final mark	<p>The final mark is given based on 30 points. The exam is passed when the mark is greater than or equal to 18/30. Knowledge of the main classes of organic compounds and of their nomenclature, physical properties and reactivity is essential for passing the exam. To achieve a high evaluation the student must have developed transversal skills such as independent judgment and adequate capacity for argumentation and presentation.</p>
Additional information	