

Main course information	
Academic subject	Organic Chemistry
Degree course	Bachelor degree in Natural Science
Classe di laurea	L32
ECTS credits (CFU)	6
Compulsory attendance	Strongly recommended
Teaching language	Italian
Accademic Year	2019/2020

Docente responsabile	
Name & SURNAME	Angela Punzi
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Tutorial time/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.

Course details	Study area	SSD code	Type of class
	Chemistry	CHIM/06	Lecture/workshop

Teaching schedule	Year	Semester
	I	II

Modalità erogazione	CFU/ECTS	Lessons (hours)	CFU/ECTS lab	Lab hours	CFU/ECTS tutorial/workshop	Tutorial/workshop hours	CFU/ECTS field trip	Field trip Hours
		4,5	36	0,5	7,5	I	15	0

Time management	Total hours	Teaching hours	Self-study hours
		150	58,5

Academic Calendar	First lesson	Final lesson
	March 2020	June 2020

Syllabus	
Course entry requirements	Knowledge of General Chemistry.
Expected learning outcomes (according to Dublin Descriptors) (it is recommended that they are congruent with the learning outcomes contained in A4a, A4b, A4c tables of the SUA-CdS)	
<i>Knowledge and understanding</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 lectures.
<i>Applying knowledge and understanding</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>Making informed judgements and choices</i>	The student should acquire autonomy in relation with the evaluation and 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>Communicating knowledge and understanding</i>	The student should acquire the ability to use a vocabulary and a terminology related to Organic Chemistry to be able to understand the bibliography of the area, as well as 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>Capacities to continue learning</i>	The student should 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.

Syllabus	
Course content	<p>Structure, nomenclature and chemical-physical properties 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).</p> <p>Structure and chemical-physical properties of the main classes of natural compounds: Lipids, Carbohydrates, Nucleic acids, Proteins.</p> <p>Exercises in the classroom: carrying out exercises aimed at understanding and deepening concepts and notions acquired through frontal teaching.</p> <p>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.</p>
Course books/Bibliography	W. Brown & T. Poon, <i>Introduzione alla Chimica Organica</i> , EdiSES. This text is available for consultation in University Libraries.
Notes	The recommended text must be integrated with teaching material provided by the lecturer.
Teaching methods	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.
Assessment methods (indicate at least the type written, oral, other)	The evaluation of the student is based on an oral interview, as well as on individual participation in the lessons, classroom and laboratory exercises on questions proposed by the lecturer. For the final grade the following will be taken into consideration: completeness and clearness of the exposition, properties of language, critical capacity. Furthermore, assiduous and active participation during the teaching course will contribute to a very positive evaluation.
Evaluation criteria (Explain for each expected learning outcome what a student has to know, or is able to do, and how many levels of achievement there are)	<p>Knowledge and understanding</p> <p>The student must demonstrate to know all the contents of the course. In particular, knowledge of the 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.</p> <p>Ability to apply knowledge and understanding</p> <p>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.</p>

Autonomy of judgment

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.

Communication skills

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.

Learning ability

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.

Further information