

COURSE OF STUDY *Science and Management of Maritime Activities*
ACADEMIC YEAR 2023/2024

ACADEMIC SUBJECT *Organic Chemistry*

General information	
Year of the course	2023-2024
Academic calendar (starting and ending date)	<i>II semester (04-03-2024-15-06-2024)</i>
Credits (CFU/ETCS):	9
SSD	CHIM/06
Language	ITALIAN
Mode of attendance	<i>obligatory</i>

Professor/ Lecturer	
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Department and address	<i>Campus medicina veterinaria (Valenzano-Bari)</i>
Virtual room	<i>codice teams n4a0vf9</i>
Office Hours (and modalities: e.g., by appointment, on line, etc.)	To be established in agreement with the students

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
225	64	8	153
CFU/ETCS			
9	8	1	

Learning Objectives
<p>Dublin Descriptor 1 Acquire general knowledge of the basic principles of chemistry for the understanding and in-depth study of the topics addressed in subsequent courses –</p> <p>Dublin Descriptor 2: At the end of the study path the student will have developed the ability to understand or the characteristics acidic and basic substances of an organic substance and its reactivity –</p> <p>Dublin 3 descriptor: Students must have the ability to collect and interpret experimental data deemed useful to determine autonomous judgments, and to develop this autonomy they will be encouraged to expose topics and exercises for the whole class. • Autonomy of judgment Acquisition of conscious autonomy of judgment with reference to evaluation and interpretation of experimental data –</p> <p>Dublin 4 descriptor: • Communication skills At the end of the course the student should have acquired sufficient language skills, as regards the specific scientific terminology of the teaching and will acquire the ability to interpret material properties and transformations on the basis of the structure of the matter –</p> <p>Descriptor of Dublin 5: - Ability to learn autonomously Acquisition of autonomous</p>

	learning and self-evaluation skills of one's preparation, aimed at interpreting subsequent studies with a high degree of autonomy. At the end of the course the student must be able to • Understand all the reactions that can occur and recognize all substances that exhibit conformational or configurational isomerism
Course prerequisites	
Teaching strategie	
Expected learning outcomes in terms of	
Knowledge and understanding on:	<ul style="list-style-type: none"> ○ XXXXXXXXXX ○ XXXXXXXXXX ○ XXXX ○ XXXXXXXX
Applying knowledge and understanding on:	<ul style="list-style-type: none"> ○ XXXXXXXXXX ○ XXXXXXXXXX ○ XXXXXXXXXX
Soft skills	<ul style="list-style-type: none"> • <i>Making informed judgments and choices</i> <ul style="list-style-type: none"> ○ XXXXXXXXXX ○ XXXXXXXXXX ○ XXXXXXXXXXXXX ○ XXXXXXXXXX • <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ XXXXXXXXXXXXXXXX, ○ XXXXXXXXXXXXXXXX • <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ XXXXXXXXXX.
Syllabus	
Content knowledge	Carbon: electronic configuration, hybridization and bonds /: simple, double bond, Chemical reactivity and organic reactions: Lewis acids and bases, electrophilic and nucleophilic reagents, carbocations and carbanions. Main types of organic reactions: addition, substitution, elimination. Nomenclature: systematic and common nomenclature of the main functional groups. Stereochemistry and stereoisomerism: enantiomerism and optical activity, diastereoisomerism, geometric isomers, configurations and conformations. Hydrocarbons: Alkanes: chemical-physical properties, nomenclature, reactivity. Alkenes and alkynes: chemical-physical properties, nomenclature, elimination reactions. Alkyl halides, alcohols, ethers and epoxides: chemical-physical properties, nomenclature, aliphatic nucleophilic substitutions. The carbonyl group and its compounds: Aldehydes and ketones: chemical-physical properties, nomenclature, nucleophilic addition reactions. Carboxylic acids and functional derivatives of carboxylic acids: chemical-physical properties, nomenclature, acidity, reactivity, esterification and saponification. Nitrogenous compounds: Amines, amides, chemical-physical properties, nomenclature, basicity, reactivity, urea. Aromaticity: benzene ring, main aromatic compounds, nomenclature, electrophilic aromatic substitution. Biomolecules: classification, structures, properties of carbohydrates, lipids, amino acids, proteins and peptides.
Texts and readings	<p>Chimica Organica Morrison, R.T.; Boyd, R.N. (1985). Chimica organica. Casa Editrice Ambrosiana, Milano.</p> <p>Brown, W.H. (2001). Introduzione alla chimica organica. EDISES, Napoli</p> <p>Brown, W.H. (1996). Chimica organica. EDISES, Napoli</p>

Notes, additional materials	<i>D'Auria guida ragionata allo svolgimento di esercizi</i>
Repository	<i>Teams</i>
Assessment	
Assessment methods	The preparation test consists of an ongoing test halfway through the course, a written test and an oral test. -The time allowed for the written test and the ongoing test is two hours. - all three tests will contribute to the final evaluation which will be made up of the average of the marks obtained; -It is not allowed to bring any teaching material during the tests; - the communication of the results of the ongoing and written tests will take place on teams
Assessment criteria	<p>Knowledge and understanding:</p> <ul style="list-style-type: none"> o Verification of the basic principles of chemistry for understanding and deepening the topics that will be addressed in the subsequent courses <ul style="list-style-type: none"> • Applied knowledge and understanding: o Knowledge of all the mechanisms that allow chemical reactions <ul style="list-style-type: none"> • Making judgements: o Evaluation and interpretation of experimental data <ul style="list-style-type: none"> • Communication skills: <p>Evaluation of appropriate language, as regards the specific scientific terminology of teaching and the ability to interpret the properties and transformations of different organic compounds</p> <ul style="list-style-type: none"> • Ability to learn: <ul style="list-style-type: none"> o Verification of autonomous learning and self-evaluation abilities of one's preparation, aimed at interpreting subsequent studies with a high degree of autonomy
Final exam and grading criteria	. "The final grade is awarded out of thirty. The exam is considered passed when the grade is greater than or equal to 18". The minimum grade for the written test to access a possible oral exam is 16/30.
Further information	
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