

---

**COURSE: Organic Chemistry I**

---

ACADEMIC YEAR: 2019-2020

---

TYPE OF EDUCATIONAL ACTIVITY: (Basic, Characterizing, Affine, Free choice, Other) Basic

---

TEACHER: **Maurizio D'Auria**

---

e-mail: maurizio.dauria@unibas.it

website:

phone: +39 0971 205480

mobile (optional):

---

Language: Italian

---

ECTS: (lessons e  
tutorials/practice) 6n. of hours: (lessons e  
tutorials/practice) 48Campus: Potenza  
Dept./School: Dipartimento di  
Scienze  
Program: Chemistry (L27)Semester: first

---

**EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES**

*The course wants to give basic information on the principal properties of the organic compounds, allowing the student to understand the physical properties and the chemical behavior of every organic compounds.*

- Knowledge and understanding: knowing the structure of an organic compound and knowing how to decipher the chemical behavior in the most varied experimental conditions.
  - Ability to apply knowledge and understanding: ability to have a critical approach to the formulation of a chemical compound, both in terms of its preparation and in terms of its possible course.
  - Independent judgment: ability to be able to choose the best experimental conditions to obtain a certain result.
  - Communication skills: ability to define the correct way an organic compound and ability to draw it correctly both in the plane and in space.
  - *Learning skills: to know the main sources of updating.*
- 

**PRE-REQUIREMENTS**General and inorganic chemistry

---

**SYLLABUS**

*Electronic configuration. Bonds. Representing molecules. Hydrocarbons: alkanes, alkenes, arenes, alkynes. Compounds containing nitrogen: sp<sup>3</sup> nitrogen, amines, sp<sup>2</sup> nitrogen, s nitrogenp. Compounds containing oxygen: sp<sup>3</sup> oxygen, alcohols, ethers, sp<sup>2</sup> oxygen, aldehydes and ketones, carboxylic acids and their derivatives. Compounds containing sulfur. Alkyl halides (15 hours). Stereochemistry: conformations, chirality (10 hours). The organic reactions. Reaction mechanisms: bimolecular nucleophilic substitution, electrophilic addition, monomolecular nucleophilic substitution, radical halogenation. Nucleophilic substitution at sp<sup>3</sup> carbon. Eliminations. Oxidation of an alcohol. Addition to carbon-carbon multiple bonds: electrophilic addition of HCl, HBr and H<sub>2</sub>O, addition to conjugated dienes, electrophilic addition to alkynes, halogen addition, radical addition, hydroboration-oxidation, epoxidation, oxidation with osmium tetroxide, ozonization and ozonolysis, hydrogenation. Addition and nucleophilic substitution to the carbonyl group. Substitution alpha to carbonyl groups. Carbohydrates (23 ore).*

---

**TEACHING METHODS**Theoretical lessons

---

**EVALUATION METHODS**Oral examination

---

**TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL***Botta B. (Ed.) Chimica Organica, II ed., Edi-Ermes, Milano, 2016*

---

**INTERACTION WITH STUDENTS**

*Starting the course, after the description of the objectives, syllabus and evaluation methods, the teacher gives to the students the electronic available material. The All'inizio del corso, dopo aver descritto obiettivi, programma e metodi di verifica, il docente mette a disposizione degli studenti il materiale didattico. It collects a list of students who intend to enroll in the course, together with name, serial number and email.*

*Office hours: Monday from 15 to 16 at the study and Tuesdays from 15 to 16 at the study*

*In addition to weekly reception, the instructor is available at all times for a contact with the students, through their e-mail*

---

DATE DI ESAME PREVISTE<sup>1</sup> 10.2.2020; 9.3.2020; 13.4.2020; 11.5.2020; 15.6.2020; 6.7.2020; 21.9.2020; 12.10.2020; 7.12.2020.

---

SEMINARS BY EXTERNAL EXPERTS YES  NO **FURTHER INFORMATION**

---