
COURSE: Organic Chemistry I

ACADEMIC YEAR: 2017-2018

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

TEACHER: Maurizio D'Auria

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website:

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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.

PRE-REQUIREMENTSGeneral and inorganic chemistry

SYLLABUS

Electronic configuration. Bonds. Representing molecules. Hydrocarbons: alkanes, alkenes, arenes, alkynes. Compounds containing nitrogen: sp³ nitrogen, amines, sp² nitrogen, s nitrogen. Compounds containing oxygen: sp³ oxygen, alcohols, ethers, sp² 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 sp³ carbon. Eliminations. Oxidation of an alcohol. Addition to carbon-carbon multiple bonds: electrophilic addition of HCl, HBr and H₂O, addition to conjugated dienes, electrophilic addition to alkynes, halogen addition, radical addition, hydroboration-oxidation, epoxidation, oxidation with osmium tetroxide, ozonization and ozonolysis, hydrogenation. Aromatic electrophilic substitution. Addition and nucleophilic substitution to the carbonyl group. Substitution alpha to carbonyl groups (23 ore).

TEACHING METHODSTheoretical lessons

EVALUATION METHODSOral 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. At the beginning of the course, after having described the objectives, program and methods of verification, the teacher makes available to the students the didactic material. 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

12.2.2018; 13.3.2018; 15.5.2018; 12.6.2018; 10.7.2018; 9.10.2018; 11.12.2018.

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