

COURSE: Organic chemistry

ACADEMIC YEAR: 2016/2017

TYPE OF EDUCATIONAL ACTIVITY: base

TEACHER: Maurizio D'Auria

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website:

phone: 0971205480

mobile (optional):

Language: Italian

ECTS: 6 (lessons e
tutorials/practice)

n. of hours: 56 (40+16)
(lessons e
tutorials/practice)

Campus: Potenza/Matera
Dept./School: School of
agriculture, forestry, food and
environmental sciences
Program:

Semester: II

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-REQUIREMENTS

General 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 METHODS

Theoretical lessons

EVALUATION METHODS

Written examination,

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

Maurizio D'Auria, Chimica Organica Essenziale, Editrice Ermes, Potenza, 2014

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 verification methods, 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

EXAMINATION SESSIONS (FORECAST)¹

14.2.2017; 14.3.2017; 16.5.2017; 13.6.2017; 11.7.2017; 10.10.2017; 12.12.2017.

SEMINARS BY EXTERNAL EXPERTS YES NO

FURTHER INFORMATION

¹ Subject to possible changes: check the web site of the Teacher or the Department/School for updates.



**SCUOLA DI SCIENZE
AGRARIE, FORESTALI,
ALIMENTARI
ED AMBIENTALI**