

Organic Chemistry I ad II

Academic year: 2016/2017

Faculty: Chemistry Department

Study courses: Environmental Sciences

Study plans/Curricula: -----

Type: Bachelor Degree

Total Credits: 12

Didactic Methods: Lectures and exercises.

Didactic Period: First semester (October-January)

Exam type: Oral

Professor in charge: Roberta Ragni

Training objectives: Basic principles of Organic Chemistry: learning functional groups and nomenclature, chemical structure, reactivity and stereochemistry of organic molecules. Overview of the main classes of organic biomolecules and of organic pollutants.

Prerequisites: Knowledge of basic principles of General and Inorganic Chemistry

Didactic Methods Lectures, exercises and use of molecular model kits

Course programme

PROGRAMME:

Lectures: (90 h)

Introduction. Nomenclature, chemical structures, stereochemistry and reactivity of hydrocarbons (alkanes, alkenes, alkynes), alocanes, aromatic and heteroaromatic compounds, alcohols, ethers, thiols, phenols, aldehydes, ketones, carboxylic acids, amines, acyl chlorides, anhydrides, esters, amides, enolate anions. Carbohydrates, α -aminoacids, nucleosides, nucleotides, triglycerides, phosphoglycerides.

Tensioactive molecules. Organic pollutants: Polycyclic Aromatic Hydrocarbons, PolyChloroBiphenyls and pesticides. Petroleum: chemical composition, refining processes and environmental aspects.

Exercises (30 h)

Reference Texts

"Introduzione alla Chimica Organica" William Brown, Thomas Poon, EdiSES.

"Chimica dell'ambiente" Stanley E. Manahan, Ed. Piccin