

LU2Ci002: Organic chemistry 1

Persons in charge

P1

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P2

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1. Prospectus

Teaching hours: lectures 22 h, tutorial classes 26 h, laboratory experiments 12 h

Number of credits: 6 ECTS

Grading /100: in-class exam /80 (integral in-class exam), laboratory /20 (no practical exam)

Paths: mono-disciplinary / bi-disciplinary / minor

Period of teaching in English: semester 2 (period P2) of the 2nd-year Bachelor in Chemistry

2. Pedagogic aims of the course

a. Objectives

To provide students with the fundamentals of organic chemistry:

- a) mastery of the structural, electronic and stereochemical aspects of organic molecules;
- b) insightful understanding of reactivity through reaction mechanisms;
- c) knowledge of selected organic reactions and their application for the synthesis of simple target molecules;
- d) learning of the basic experimental techniques in organic chemistry.

b. Topics covered

Introduction to the reactivity of organic molecules. The reactivity of σ bonds (halides, alcohols, amines):

- Nucleophilic substitutions at saturated carbon.
- Eliminations at saturated carbon. The reactivity of p bonds:
- Electrophilic additions at $C=C$ and $C\equiv C$
- Nucleophilic additions at $C=O$.

Reactivity at σ position α of the $C=O$ group. Reactivity of aromatics.

3. Pre-requisites

Courses of chemistry of the 1st-year of the Bachelor in Chemistry of the Faculté des Sciences et Ingénierie de Sorbonne Université:

- Semester 1: chemical bond, VSEPR theory, nomenclature, stereochemistry, chirality, electronic effects.
- Semester 2: proton-transfer and redox reactions, equilibrium constants of reactions.