

## Chemistry

### Organic Chemistry 1

#### IDENTIFICATION

CODE : BS-3-S1-EC-COCHORG  
ECTS : 3.0

#### HOURS

Lectures : 0.0 h  
Seminars : 26.0 h  
Laboratory : 24.0 h  
Project : 0.0 h  
Teacher-student  
contact : 50.0 h  
Personal work : 25.0 h  
Total : 75.0 h

#### ASSESSMENT METHOD

Continuous monitoring in Practical  
work [3 short written interrogations  
and 3 reports]  
1 exam at the end of the period

#### TEACHING AIDS

3 handouts [TP, TD and CM] +  
specific supports downloadable on  
moodle  
A kit of molecular models

#### TEACHING LANGUAGE

French

#### CONTACT

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#### AIMS

##### SKILLS:

"This class contributes to the following competencies [level] with associated capabilities:

A1. Analyze a system [real or virtual] [level 2]

- Identify the electronic environment of each atom

- Chemically explain the stability of molecules

- Propose a coherent molecular structure

- Using periodic classification as a tool in the construction and understanding of molecular  
buildings

A2. Operating a model of a real or virtual system [level 2]

- Exploiting the main information of molecules

- Studying the interaction of a molecule with its environment

A3. Implement an experimental approach [level 2]

A6. Communicate a scientific analysis or approach with scenarios adapted to their speciality  
[level M]

C2. Design, adapt and optimize experimental designs in Biosciences [level 1]

- Developing experimental skills

- Cite the different experimental techniques and associated set-ups

C5. Quantifying, structurally characterizing and purifying biomolecules [level 2]

- Drawing in three-dimensional structure the molecules and master the different  
representations in space

- Predicting the evolution of certain physico-chemical properties as a function of electronic  
effects

- Determining the nomenclature of a single molecule

- Identify species / potential reaction sites

- Using a technique of extraction and purification of a molecule of natural origin

C13. Understand the quality assurance and regulatory framework in the field of biotechnology  
[level 1]

- Follow good laboratory practice and work safely

B3. Interact with others, work in teams [level M]

The knowledge associated with this class is :

- To know how to draw in three-dimensional structure the molecules and to master the  
various representations in space.

- To know the nomenclature of a simple molecule

- To know how to identify species / potential reaction site

- To know the classical experimental techniques and the associated set-ups.

- To comply with good laboratory practice."

#### CONTENT

- Nomenclature

- Chemical bonds and Lewis structure

- How to write and read a reaction mechanism?

- Stereochemistry and asymmetric carbon

TP: Experimentation of the concepts developed in regular classroom: Specific applications to  
fine chemistry and separation techniques

#### BIBLIOGRAPHY

Invitation to Organic Chemistry- A.W. Johnson- Johns and Bartlett. Ed

#### PRE-REQUISITE

Electronic structure of atoms

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