



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## SYLLABUS DEL CORSO

### Chimica

2425-1-I0302D002-I0302D005M

---

#### Aims

The student should be able to:

- describe the fundamentals of atomic structure, types and significance of chemical bonds; indicate possible interactions between molecules
- explain the types of possible solutions and their concentration; define the concepts of osmolality and osmotic pressure the significance of osmotic phenomena in biological processes
- describe the different types of reactions that can occur between the compounds
- define the concept of acid, base and salt, pH and its meaning; describe the properties of the buffer systems.
- identify structural and chemical properties of the major classes of organic compounds and characteristics of the main reactions occurring in organic compounds.
- describe chemical characteristics of biological compounds: lipids, sugars, amino acids and nucleotides; describe composition and structure of nucleic acids and proteins

#### Contents

The course aims to provide the student with: the knowledge of general and organic chemistry for the study of compounds in biological systems.

## **Detailed program**

- The structure of matter. Chemical bonds.
- Solutions. Chemical reactions
- Acids, bases and buffers.
- Classification of organic compounds; functional groups which characterize the organic compounds.
- General properties of organic compounds and their reactivity.
- Organic compounds of biological interest: carbohydrates, amino acids, nucleotides, lipids. Polysaccharides. Proteins. Nucleic acids.

## **Prerequisites**

## **Teaching form**

Lectures, exercises

## **Textbook and teaching resource**

M. Stefani, N. Taddei: Chimica Biochimica e Biologia Applicata Zanichelli.

R. Roberti, G. Alunni Bistocchi: Elementi di Chimica e Biochimica McGrawHil

## **Semester**

First semester

## **Assessment method**

10 multiple choice questiona and open questions

## **Office hours**

By appointment required by mail

# Sustainable Development Goals

GOOD HEALTH AND WELL-BEING

---