



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Chemistry

2627-1-I0304D001-I0304D00101

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#### 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 McGrawHill

## Semester

First semester

## Assessment method

10 multiple choice questions and open questions

## Office hours

By appointment required by mail

**Sustainable Development Goals**

GOOD HEALTH AND WELL-BEING

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