UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Chemistry

2425-1-I0303D002-I0303D005M

Aims

The student should be able to:
• describe the fundamentals of the structure of the atom, types and meaning of chemical bonds; indicate the possible interactions between molecules
• illustrate the possible types of solutions and explain how the concentration of a solution can be expressed;
• define the concepts of osmolarity and osmotic pressure and describe the meaning of osmotic phenomena in biological processes
• describe the different types of reactions that can occur between inorganic compounds
• define the concept of acid, base and salt, the concept of pH and its meaning and describe the properties of buffer systems
• indicate the structural and chemical properties of the main classes of organic compounds and the characteristics of the main reactions that occur in organic compounds
• describe the chemical characteristics of organic compounds of biological interest: lipids, sugars, amino acids and nucleotides; describe the composition and structure of nucleic acids and proteins

Contents

The course provides the student with the knowledge of general and organic chemistry necessary for the study of compounds present in biological systems.

Detailed program

• Structure of matter. Chemical bonds.
• Solutions. Colligative properties. Chemical reactions

• Acids and bases and buffer solutions.
• Classification of organic substances and functional groups that characterize them
• General properties of organic compounds and their reactivity.
• Organic compounds of biological interest: structure of sugars, amino acids, nucleotides, lipids. Proteins. Polysaccharides. Nucleic acids.

Prerequisites

None

Teaching form

5 lessons (2 hours) held in presence mode;
5 exercise activities (2 hours) carried out in face-to-face delivery mode.

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

Monza
The written Chemistry test will consist of 10 questions (multiple choice) and open questions to check preparation on the exam program.

Bergamo
The written Chemistry test will consist of 32 multiple choice questions to check your preparation on the exam programme. Possible oral (at the request of the teacher or student) with discussion of the written text.

Office hours

By appointment required by mail

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION