UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Biochimica - 1

2526-1-I0102D001-I0102D001M-T1

Aims

The course provides the fundamental principles of chemistry and fosters the understanding of the basic mechanisms that regulate molecular organization, biochemical reactions, cellular and subcellular morphology, and major metabolic cycles. In addition, the course aims to develop the student's knowledge of the principles of nutrition, with particular attention to their role in maintaining health and preventing disease.

Contents

The student will learn 1) the general information on the molecules that make up living matter; 2) the structure, function, mechanism of action of enzymes and their role in metabolic regulation; 3) the mechanism by which the living organism produces energy; 4) nutritional aspects as a source of energy in everyday life and in physical exercise; 5) digestive processes, the molecules involved in energy metabolism.

Detailed program

Introduction to the course and general information on living matter. Chemistry principles. Structural biochemistry: Carbohydrates, Lipids, Proteins, Nucleotides. Biochemical reactions, enzymes, enzymatic kinetics, regulation. Bioenergetics, respiratory chain, oxidative phosphorylation. Principles of digestion and absorption of nutrients. Nutrition and Vitamins. Energy metabolism.

Prerequisites

Biology.

Teaching form

Frontal lectures.
10 lessons (2-hours/each) held in person (Monza) and in synchronous distance learning (Lecco, Sondrio and Bergamo locations).

Textbook and teaching resource

Slides of the lectured (uploaded on e-learning).
Suggested books:
Siliprandi Tettamanti Biochimica Medica V Ed Piccin
Di Giulio A., Fiorilli A., Stefanelli C., Biochimica per le scienze motorie, Casa Ed Ambrosiana
Bertoli, Colombo, Magni, Marin Palestini Chimica e Biochimica Edises anche in e-book
Nelson and Cox Fondamenti di biochimica di Lehninger Ed Zanichelli 2021 anche in e-book

Semester

1st year, I semester

Assessment method

Written test. Multiple choice questions.

Office hours

on appointment: claudia.corbo@unimib.it

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION | GENDER EQUALITY