



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Biochemistry

2425-1-I0101D001-I0101D001M

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#### Aims

The course will provide principles of chemistry and the understanding of the basic mechanisms regulating the molecular organization, the biochemical reactions, and the metabolic cycles. The course also aims to develop in the student the knowledge of the principles of nutrition.

#### 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

## Teaching form

Frontal lectures.

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

## Textbook and teaching resource

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

Integrated written test for the Biochemistry, Biology and Genetics modules.

A single multiple choice quiz consisting of 33 questions (Value 1/question) on topics relating to the three modules.

## Office hours

on appointment. [claudia.corbo@unimib.it](mailto:claudia.corbo@unimib.it)

## Sustainable Development Goals

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

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