

## SYLLABUS DEL CORSO

### **Biochimica - 1**

**2526-1-I0102D001-I0102D001M-T1**

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#### **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](mailto:claudia.corbo@unimib.it)

## **Sustainable Development Goals**

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

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