UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Biochemistry

2223-1-I0202D138-I0202D001M

Aims

After completing this course the student will have acquired the skills necessary to understand the physiological aspects of the movement. The course aims at developing the students' understanding of basic mechanisms that regulate the molecular organization, biochemical reactions, morphology, cellular and subcellular and metabolic pathways that guide the operation and the anatomy of the osteoarticular system. Moreover, this course aims, by means of the study of neuroanatomy and movement neurophysiology, to develop the knowledge of the systems that control the movement.

Contents

To know the generalities on living matter To know the structure, the function, the mechanism of the enzymes and their role in the metabolic regulation. To know the mechanisms with which the living organism produces energy To know the nutritional aspects as a source of energy in the life of every day and in the physical exercise To know the mechanisms of digestion and absorption of the molecules implicated in the energetic metabolism

Detailed program

Carbohydrates, lipids, proteins and nucleotides. Biochemical reactions. Enzymes, enzyme kinetics, regulation. Bioenergetics, respiratory chain, oxidative phosphorylation. Digestion and absorption of carbohydrates, lipids, proteins. Nutrition and Vitamins. Energetic Metabolism. Biochemistry of muscle, hearth and connective. Biochemistry of the SNC. Bioenergetic of muscle contraction; caloric value, equivalent caloric. Different esoergonic systems in the physical exercise (aerobic and anaerobic physical activity).

Prerequisites

Teaching form

Face-to-face lectures

Textbook and teaching resource

1. Bertoli, Colombo, Magni, Marin Palestini Chimica e Biochimica Edises anche in e-book
2. Nelson and Cox Fondamenti di biochimica di Lehninger Ed Zanichelli 2021 anche in e-book
3. Siliprandi Tettamanti Biochimica Medica V Ed Piccin

Semester

First year, I semester

Assessment method

Written examination - 15 questions multiple choice - Oral exam on evaluation of teachers

Office hours

by appointment

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING