UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Basic Biomedical Sciences

2223-1-I0201D127

Aims

By the end of the course students will have acquired the skills to understand the physiological aspects of movement. The course aims at developing the students' understanding of the basic mechanisms that regulate molecular organization, biochemical reactions, cellular and subcellular morphology and metabolic pathways that drive the operating system and the pathology of osteoarticular system.

Contents

The course aims to provide basic knowledge on the following topics:
The cell. Organization of the cellular space. The cytoplasmic membrane. The mitochondrion. Molecular mechanisms essential to cell life. Functional organization of the different tissues as basic components of the organs. Biological significance of macromolecules and their role in organisms. Energy metabolism and nutritional aspects as a source of energy in everyday life and in physical exercise; digestive processes. Biochemistry of muscle, myocardium and connective tissue. CNS biochemistry. Bioenergetics of muscle contraction. Caloric value, caloric equivalent, the fuel of choice in muscle work. Different exergonic systems in physical exercise (aerobic and anaerobic physical activity). The chromosomes. Cell division. Errors of chromosomal mechanics. Fertilization. Heredity and Mendel's Laws. The transmission of genes. Human karyotype. Basic physio-pathological notions (homeostasis, disease, etiology, pathogenesis ...), human immune mechanisms. Cell and tissue damage. Inflammation and tissue repair. Mechanisms underlying tumor development

Detailed program

See the content in the Syllabus of each teaching module

Prerequisites

None

Teaching form

Lectures.

Lessons will be in attendance, subject to any ministerial changes following the COVID pandemic situation

Although this course is held in Italian, Erasmus students can ask to use books written in English

Textbook and teaching resource

See syllabus of each teaching module

Semester

First year, I semester

Assessment method

Test with multiple choice (15 quiz of Biology, 15 of Histology, 21 of Biochemistry, 15 of Genetics, 15 of Pathology) and an open ended question of Pathology. The exam will be aimed at evaluating the acquisition of all the notions reported in the detailed program of each module. The correctness and consistency of the answers with respect to the question requested will be assessed.

Final oral exam at the discretion of the teacher or on the student's proposal regarding the project

Although this course is held in Italian, for Erasmus students, students can take the exam in English if they wish to do so.

Office hours

by appointment (email request)

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING