



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Movement Basics

2425-1-I0202D138

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#### 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 anatomy 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. The chromosomes. Cell division. Errors of chromosomal mechanics. Fertilization. Heredity and Mendel's Laws. The transmission of genes. Human karyotype. Ion channels, resting membrane potential, action potential and synaptic transmission. Response to stimuli, pain perception, organization of the motor system, neurophysiological mechanisms for controlling movements and the structures involved.

Arguments concerning the gender medicine will be treated in some relevant modules.

#### Detailed program

See the syllabus of each teaching module

## **Prerequisites**

None

## **Teaching form**

Lessons will be held in presence.

## **Textbook and teaching resource**

See syllabus of each teaching module

## **Semester**

First year, I semester

## **Assessment method**

Test with multiple choice only at the end of the course (15 quiz of biology, 15 of Histology, 15 of Biochemistry, 15 of Genetics) and two open ended questions of Neurophysiology. The test is aimed at verifying the acquisition of the notions reported in the program. 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, course material can also be available in English, and 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

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