UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Fundamentals of Human Physiology

2122-2-H4102D010

Aims

The course aims to provide knowledge about cellular functions at the basis of systems physiology. At the end of the course, the student will be able to understand how a cell can perform its vital functions to guarantee the homeostasis of the tissue to which it belongs thanks to its basic mechanisms. The student will be able to use this knowledge for the interpretation of the pathophysiological signs and symptoms, as a starting point for the study of the physiology of the individual systems subsequently treated in the vertical tracks.

Contents

The course is based on the systematic presentation of physiological concepts underlying the functions of the human body. The sequence of events leading to an imbalance of a specific function cannot be appreciated without a deep understanding of the basic biophysical and physiological mechanisms. Therefore, these mechanisms that guarantee functions at the cellular and tissue level will be presented. In particular, membrane transports, neuronal, muscular and cardiac cell excitability, the physiology of sensory systems, the motor control and muscle contraction will be analyzed.

Detailed program

Please, refer to the specific module

Prerequisites

Anatomy, biology, genetics and phisics

Teaching form

Lessons will take place in person. In case of emergency the lessons will take place in blended mode: asynchronous / synchronous videotaped lessons
Whenever possible, clinical case analyzes will be proposed for the evaluation of specific physiological parameters

Textbook and teaching resource

Please, refer to the specific module

Semester

First semester

Assessment method

There will be no ongoing tests. In the Covid-19 emergency period, the exams will be carried out electronically through the platforms made available by the University.

The exam consists in a written test. Open questions will be posed to the student in order to evaluate the general knowledge of the topics. Moreover, the student will be asked to answer to questions that require the analysis of a complex phenomenon, its rationalization and the application of specific physiology principles and to solve simple exercises. Finally, a clinical case may be presented which will require the analysis of the interconnections between different physiological variables in the light of the theoretical paradigms.

Office hours

The professors receive by appointment upon agreement by e-mail