



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## SYLLABUS DEL CORSO

### Fisiologia Generale

1920-1-E3002Q008-E3002Q009M

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#### Aims

The course treats the fundamental physiological mechanisms necessary to understand the topics treated in the Ocular Physiology module.

#### Contents

Introduction.

General aspects of cell metabolism.

Biophysics and membrane transport mechanisms

Cellular physiology.

Organ Physiology.

#### Detailed program

Cell biochemistry: energy exchanges and intermediate metabolism. Glycolysis and lactic acid.

Fundamentals of cell physiology and transmembrane transport (active and passive transport, osmotic fluxes, ion channels).

Mechanisms of excitability and cell signaling. Resting and action potential. Chemical and electrical synapses.

Function and regulation of the skeletal and smooth muscle, hints to the cardiac function.

Gas exchange and circulation.

Transepithelial transport: secretion and absorption.

Introduction to neuromuscular physiology.

Organization of the nervous and endocrine control of the organic functions.

### **Prerequisites**

Human Anatomy and Histology. General Chemistry.

### **Teaching form**

Frontal lessons.

### **Textbook and teaching resource**

Transparencies (available as pdf files on E-learning).

Textbooks:

Stanfield C., Principles of Human Physiology, Pearson 2017.

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For consultation:

Kandel et al., Principles of Neural Sciences, McGraw-Hill 2013.

### **Semester**

II semester

### **Assessment method**

There are no in itinere tests.

The written exam consists in a series of multiple choice questions, aimed to verify the student's comprehension of the fundamental concepts of the course.

Passing the written text gives access to the oral exam of Ocular Physiology (which must not necessarily be passed in the same session as the written text).

## **Office hours**

Appointment by E-mail

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