UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Histology

2021-1-I0101D001-I0101D005M

Aims

The student must achieve the knowledge of the histological and anatomical bases essential for the study and understanding of the human physiology and pathology. He must also know: the structure and function of cellular components and molecular mechanisms; the chromosomal disorders; the concepts and methods of transmission of hereditary characteristics and of pathogenic mechanisms “non-traditional”; the qualitative and quantitative knowledge of biological phenomena.

Contents

The course aims to describe the organization of the human body; to explain how are cells and tissues organized to form organs and systems; to underline the functional correlations of micro- and macroscopic anatomy. It also aims to transmit the knowledge of the structure and function of the various components of eukaryotic cells, the molecular mechanisms involved in cell replication, the molecular mechanisms involved in gene expression; the chromosomal disorders and transmission pattern in Mendelian monogenic diseases as well as the basis for the qualitative and quantitative knowledge of biological phenomena for a correct application of therapies.

Detailed program

General features of eukaryotic cell: shape, size and lifespan. Main characteristics of the structure, ultrastructure and function of the major cell constituents (plasma membrane, cytoplasm, cytoskeleton, rough and smooth endoplasmic reticulum, Golgi apparatus, lysosomes, mitochondria, nucleus). Basic concepts on the origin of human tissues. Structure, classification, localization and functions of: Epithelial Tissue: lining epithelium, glandular epithelium; Connective tissue: proper connective tissue, adipose tissue, cartilage, bone tissue (osteogenesis), blood and haemopoiesis; Muscle tissue: skeletal muscle, smooth muscle, cardiac muscle; Nervous tissue: neurons (cell body, dendrites, axons), structure of nerve fibers, synapses and nerve transmission, glial cells.

Prerequisites

Teaching form

During the Covid-19 emergency period the lessons will be held in mixed mode: partial presence of students in classrooms and asynchronous/synchronous videorecorded lessons.

Textbook and teaching resource

Sica G. et al. Istologia (2014) Idelson Gnocchi.

Semester

1st Year, 1st Semester

Assessment method

Written examination: multiple choice and open ended questions

Office hours

On appointment