



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Organi e Funzioni

2324-1-I0302D003

Aims

HISTOLOGY

The student will learn:

- To know and describe the structure and ultrastructure of the eukaryotic cell and correlate the morphology to the function of each organelle.
- To know and describe the structure and morpho-functional characteristics of human tissues.

ANATOMY

The student will learn:

- To know and describe the human body organization and the anatomic terminology. To know and describe the organ macro- and microscopic anatomy and their relationships.

SPECIAL ANATOMY

The student will learn:

- To recognize specific preparations using the optical microscope and to describe the microscopic anatomy of the organs that constitute the apparatuses and systems of the human body.

PHYSIOLOGY

The student will learn:

- To know and describe the functional mechanism of the integrated biological processes in conditions of normality and the fundamental tools for the pathologic alteration comprehension.

Contents

The course provides students with the fundamental theoretical knowledge of histology, anatomy and physiology, with a view to their subsequent professional application. Within the different modules, the following concepts will be examined: the cell structure, the morpho-functional characteristics of tissues; the organization of the human body and its macroscopic and microscopic structure; the functional mechanisms of the biological phenomenon integrated in normal conditions and the basic tools to interpret pathological changes. The course also provides insight into Microscopic Anatomy.

Detailed program

HISTOLOGY:

Cytology

- General properties of eukariotic cells;
- Cell membrane;
- Cytosol;
- Intracellular compartments, cytoplasmic organelles;
- Nucleus
- Cytoskeleton.

Histology

- Tissues: classification and methods of study;
- Epithelial tissue;
- Connective tissue;
- Adipose tissue;
- Cartilage;
- Bone;
- Smooth muscle, skeletal muscle, cardiac muscle;
- Nervous tissue;
- Blood.

ANATOMY:

- General Principles of Anatomy.
- The three-dimensional organization of the human body. Anatomical terminology;
- The body regions;
- Hollow organs and parenchymatous organs;
- Locomotor system and skeleton, joints, muscles;
- Circulatory System;
- Lymphatic system;
- Digestive system;
- Respiratory system;
- Urinary system;
- Female and male reproductive system;
- Endocrine glands;
- Nervous system.

SPECIAL ANATOMY:

Detailed study of Microscopic Anatomy. Observation and discussion of histological preparations using an optical microscope relating to the organs described in the Anatomy program.

PHYSIOLOGY:

- Physiology of the cardiocirculatory system: viscosity and density of the blood; the heart; ventricular pressure-volume relation; conduction system; electrocardiogram; arterial blood pressure and its determinants; blood pressure measurement;
- Respiratory physiology: oxygen transport-utilization system; transport of O₂ and CO₂ in the blood; principles of mechanics. Acid-base balance. Maintenance of water-salt balance: Homeostasis and internal environment;
- Renal physiology;
- Digestive system physiology;
- Nervous system physiology;
- Muscle physiology;
- . Principles of sport physiology.

Prerequisites

Teaching form

Lectures and exercises (light microscopy).

Textbook and teaching resource

Bani D. et al.: ISTOLOGIA per le professioni triennali e magistrali. Idelson Gnocchi

Adamo S. et al.: ISTOLOGIA per i corsi di laurea in professioni sanitarie. Piccin

Martini, Tallitsch, Nath ANATOMIA UMANA, EdiSES

Saladin ANATOMIA UMANA, Ed Piccin

Selley, Vanputten et al "Anatomia Umana" Idelson Gnocchi-Sorbona

McKinley, O'Loughin "Anatomia Umana" Ed Piccin

Vercelli, Bentivoglio, Bertini ed altri ANATOMIA UMANA FUNZIONALE, Ed Minerva Medica

Wheater ISTOLOGIA E ANATOMIA MICROSCOPICA Ed. Elsevier Dason

Jeffrey B. Kerr ISTOLOGIA FUNZIONALE Ed. CEA

Ross, Pawlina ISTOLOGIA Testo e Atlante, Casa Editrice Ambrosiana

AA.VV. : Fisiologia dell'uomo. Edizioni Edi.Ermes, Milano.

Guyton A.C.: Elementi di fisiologia umana. Piccin Editore.

Last editions

Physiology: Teacher will provide other educational material.

Semester

First semester

Assessment method

The evaluation of the student includes a test for each module according to the following methods:

- HISTOLOGY: TEST WITH 15 CLOSED ANSWER (Multiple choice)
- ANATOMY: TEST WITH 12 CLOSED ANSWER (Multiple choice)+ 1 OPEN QUESTION
- PHYSIOLOGY: TEST WITH 30 CLOSED ANSWER (Multiple choice). At the discretion of the professor, the oral examination will be held.
- SPECIAL ANATOMY: ORAL EXAMINATION (Recognition and discussion of a histological slide through the use of an optical microscope).
The final evaluation (in thirtieths) will derive from the weighted? average the evaluations (in thirtieths) obtained in modules described above.

Office hours

By appointment required by mail.

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION
