

## SYLLABUS DEL CORSO

### Organi e Funzioni

2324-1-I0301D003

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#### 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.

- To know and describe the structure and morpho-functional characteristics of the tissues of tooth and periodontium

##### 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 describe the Head and Neck Anatomy

##### 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; specific knowledge of Head and Neck Anatomy; the functional mechanisms of the biological phenomenon integrated in normal conditions and the basic tools to interpret pathological changes.

## 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;
- Tooth and periodontal tissue (enamel, dentin, pulp, cementum, periodontal legament)

### 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:

- Descriptive anatomy of the cranial bones with particular attention to the splanchnocranium: maxilla, palatine, zygomatic, temporal, mandible and hyoid bone.
- Temporomandibular Joint (TMJ)
- Masticatory, facial and hyoid muscles
- Cranial nerves with particular attention to Trigeminal, Facial, Glossopharyngeal and Hypoglossal nerves
- Autonomic Nervous System of the craniocervical region
- Visceral anatomy description: tongue, pharynx and salivary glands
- Teeth and supporting structures
- Paranasal cavities with particular regard to the maxillary sinus
- Intramandibular course of inferior alveolar nerve and its functional implications

#### **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 O<sub>2</sub> and CO<sub>2</sub> 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.

#### **Textbook and teaching resource**

Ambrosi G. et al.: Anatomia dell'uomo. Edi-Ermes

Bentivoglio M et al.: Anatomia umana e istologia. Edizioni Minerva Medica

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

In-depth histology of the tooth and the periodontium:  
Ten Cate: ISTOLOGIA ORALE. Piccin

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

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

Atlante di Anatomia Umana (Odontoiatria e Medicina), RC Libri DuBrul Lloyd E: Anatomia Orale di Sicher. Edi. Ermes

Last editions

Physiology and Special Anatomy: 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: TEST WITH 15 CLOSED ANSWER (Multiple choice)  
The final evaluation (in thirtieths) will derive from the weighted average of evaluations (in thirtieths) obtained in modules described above.

## **Office hours**

Reception by appointment.

## **Sustainable Development Goals**

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION

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