

## Degree Course in Dentistry and Dental Prosthetics

### **INTEGRATED COURSE: HUMAN ANATOMY**

SSD: BIO/16

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CFU NUMBER: 10

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### **PREREQUISITES**

There are no prerequisites. However, it would be advisable to have basic knowledge of cell biology, histology and cytology, in order to optimize the achievement of specific objectives.

### **LEARNING OBJECTIVES**

The Human Anatomy course aims to illustrate the morphological characteristics of all the structures composing the human body, following a regional approach, in order to provide the knowledge needed to study disciplines that analyze functional aspects.

### **LEARNING OUTCOMES**

At the end of the course the student must be able to: describe the structures composing the human body using the correct anatomical terminology; know the organization of the body regions, the macro and microscopic structure of the organs and the relationships between them; be able to use the knowledge acquired during the course to study disciplines that illustrate the functional aspects of the human body.

### **Knowledge and understanding**

At the end of this course the student will be able to:

- Know and use anatomical terminology
- Know the organization of the body regions and the anatomical structures composing them
- Identify the spatial and functional relationships between the anatomical structures



### **Applying knowledge and understanding**

At the end of the course, the student will be able to use the knowledge acquired during the Human Anatomy course to understand the functional aspects underlying human physiology and pathophysiology, a fundamental requirement for carrying out the medical profession.

### **Communication skills**

At the end of the course, the student must be able to use the specific anatomical terminology for detailed description of all anatomical structures, in order to facilitate correct and specific communication with colleagues and with other health professionals.

### **Making judgements**

The knowledge acquired during the Human Anatomy course will allow future graduated students to have the essential anatomical knowledge to link symptoms to body systems/regions in order to facilitate the diagnosis formulation.

## **COURSE SYLLABUS**

### **HEAD AND NECK** (Prof. De Luca / Prof. Papa)

Main palpable and imaging features of the skull and cervical region of the spine.

Macroscopic/microscopic anatomy of head and neck regions with skeletal and muscular systems, neurovascular, venous networks and lymphatic drainage of:

cranial fossae, external surface of the skull, oral cavity and tongue, tonsils, soft palate, pharynx, salivary glands, larynx and trachea, thyroid and parathyroid glands, contents of the carotid sheath, ear and pharyngotympanic tube, eyes, eyelids and conjunctiva, nasal cavities and paranasal sinuses, upper airways, description of the fasciae and fascial spaces of the neck and the lymphatic drainage pathways with clinical references.

Surface anatomy: territories of distribution of the cranial nerves, location and functions of the muscles of the head and neck and their innervation, landmarks with particular attention to interventional procedures and to the vascular segments most exposed to damage and accessible by objective examination and techniques of Doppler ultrasound, in addition to venous access points.

### **CENTRAL NERVOUS SYSTEM** (Prof. Sciamanna)

Spinal cord, brain stem, diencephalon, cerebral hemispheres, cerebellum, meninges, ventricles, spinal nerves and nerve plexuses, cranial nerves

### **BACK** (Prof. Cesarini / Prof Sciamanna)



Topographic anatomy; skeletal structure: vertebrae, intervertebral foramina, posterior spaces between the vertebral arches, curvatures of the vertebral column, joints: joints between the vertebrae, ligaments (anterior and posterior longitudinal ligaments, yellow, supraspinatus, nuchal, interspinous).

Back musculature with only nomenclature of the structures of the superficial, intermediate and deep planes and general information on the thoracolumbar fascia.

Spinal cord: Blood vessels, meninges, details on the organization of the meningeal and nerve structures in the spinal canal, spinal nerves.

### **UPPER LIMB** (Prof. Cesarini / Prof. Sciamanna)

Anatomy of the region.

Shoulder (bones, joints, muscles, main vessels and nerves). The armpit and its contents.

Arm (bones, muscles, vessels and nerve, elbow).

Forearm (bones, joints, muscles, vessels and nerve).

Hand (bones, joints, wrist, muscles, vessels and nerve).

### **THORAX** (Prof. De Luca)

Main surface and radiological characteristics of the chest wall and anatomy of the intercostal spaces, diaphragm and functional anatomy of ventilation.

Macroscopic/microscopic anatomy of lower airways and pleural cavities and lungs, including neurovascular supply and lymphatic drainage.

Major divisions of the mediastinum and their contents, anatomy of the heart and great vessels of the thorax, including their surface and projections on the chest wall.

Arrangement of the coronary arteries, location and function of the heart valves.

Course of the large structures that pass between the neck and thorax and of those that run through the diaphragm between thorax and abdomen, distribution of the phrenic and intercostal nerves.

### **ABDOMEN** (Prof. De Luca)

Surface anatomy of the anterior and posterior abdominal walls and of the inguinal region.

Anatomy and anatomo-clinical relationships of the esophagus, stomach, small and large intestine including the appendix, liver, pancreas, gallbladder, spleen, kidneys, ureters and adrenal glands.



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Distribution of the vascular tree to the different segments of the alimentary canal and abdominal organs. Organization of the peritoneum, meaning and distribution of ligaments.

Portal circulation and accessory portal circles.

Lymphatic drainage and innervation of the abdominal organs.

Anatomy of the subhepatic and subphrenic spaces.

### **PELVIC REGION** (Prof. De Luca)

Position, course, anatomo-clinical relationships of ureters, bladder, urethra, rectum and anal canal structure of the pelvic floor, anatomy of continence, defecation and urination in the two sexes.

Anatomy of the genital system in the male (scrotum, testis, vas deferens, seminal vesicles, prostate, penis) and in the female sex (ovaries, uterine tubes, uterus, cervix, vagina, labia majora, clitoris), anatomy of the birth canal and diameters.

Relations of the peritoneum and ligament systems with the pelvic viscera.

Arterial distribution, venous drainage, lymphatic drainage and innervation of the pelvic organs.

### **LOWER LIMB** (Prof. Cesarini / Prof Sciamanna)

Anatomy of the region.

The hip (bony pelvis, proximal femur, hip joint, vessels and nerves). Gluteal region (with extremely superficial notes on: vessels and nerves).

Thigh (bones, muscles, vessels and nerves, knee joint, popliteal fossa).

Leg (bones, joints, compartments - anterior, posterior and lateral).

Foot (bones, joints, tarsal tunnel, retinacles and arrangement of the main structures in the ankle region, arches and plantar aponeuroses, vessels and nerves).

### **COURSE STRUCTURE**

Teaching is organized in lectures and practical exercises (100 hours). During the lectures illustrative images of the various anatomical structures will be showed and, to facilitate the understanding of the three-dimensionality of the structures, real-time 3D visual tools and anatomical models will be used. During the exercises, which will take place in an equipped classroom, students will be able to use anatomical models that reproduce



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organs and systems.

### **COURSE GRADE DETERMINATION**

The examination method is based on a written test consisting of multiple choice questions, and an oral test.

The written test consists of 50 multiple choice questions, with a single correct answer and two images in which the identification of the indicated structures is requested (5 for each image). To each correct answer is given a score of 0.5. Points are not subtracted for incorrect answers.

To access the oral exam the student must have achieved at least 18/30 in the written test. During the oral exam, students can demonstrate their preparation by discussing the topics of the course. The final evaluation will be based mainly on the result of the oral exam.

Procedure for online exams due to

During extraordinary situations, like the current COVID-19 medical emergency, the examination will consist of an online oral exam (without the written test) that will be conducted remotely on Google Meet.

### **OPTIONAL ACTIVITIES**

Practical exercises based on anatomical models present in the exercise room, will allow the students to easily understand the anatomical structures. Professors will provide constant support during and after the lessons.

### **READING MATERIALS**

Gray's Anatomy (latest edition) Churchill Livingstone, Elsevier.

ATLAS: Atlas of Human Anatomy, Frank H. Netter (latest edition) Elsevier.