

SCHOOL OF MEDICINE

Master's Degree Course in Dentistry and Dental Prosthodontics

Academic Year 2023/2024

Human Anatomy

Main Information about the Course	
Year of Course	<i>I</i>
Teaching Delivery Period	<i>Second Semester</i>
University Credits (CFU/ECTS):	<i>10 University Credits</i>
Scientific disciplinary sector	<i>BIO 16/HUMAN ANATOMY</i>
Language	<i>Italian</i>
Attendance mode	<i>Mandatory attendance (75% of total hours)</i>

Teacher	
Name and surname	<i>Sabrina Lisi</i>
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Phone	<i>0805478315</i>
Location	<i>Human Anatomy and Histology Section at Policlinico, Piazza Giulio Cesare, 11 - 74123 Bari</i>
Virtual location	<i>Teams code for tutoring activities: 11dfn3u</i>
Student consultation hours	<i>Every day by reservation via email</i>

Teacher	
Name and surname	<i>Margherita Sisto</i>
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Phone	<i>0805478315</i>
Location	<i>Human Anatomy and Histology Section at Policlinico, Piazza Giulio Cesare, 11 - 74123 Bari</i>
Virtual location	<i>Teams code for tutoring activities: odj07pn</i>
Student consultation hours	<i>Every day by reservation via email</i>

Organization of teaching	
hours	
total	Frontal teaching
250	120
CFU/ETCS	
10	10

Educational Objectives
<p><i>The educational activity aims to convey to students the knowledge necessary for understanding the following fundamental aspects of human morphology:</i></p> <p><i>All systems/apparatuses meet specific functional needs.</i></p> <p><i>All systems/apparatuses comprise various organs functionally interconnected with each other.</i></p> <p><i>The cardio-circulatory, nervous, and endocrine systems oversee the functional interconnection among all anatomical systems.</i></p> <p><i>Based on this, knowledge of the following main concepts will be required:</i></p> <p><i>a. Normal macroscopic structure of the major organs and systems, with particular</i></p>

	<p><i>emphasis on their topographical arrangement, including their vascularization, lymphatic drainage, and innervation.</i></p> <p><i>b. Microscopic structure correlated with function.</i></p> <p><i>c. Functional considerations applied to understanding morphological structure.</i></p> <p><i>The course is structured regionally/topographically with frontal teaching hours. Particular attention to the stomatognathic apparatus and the regions of the neck including its contents. The central, peripheral and autonomic nervous system will also be treated in detail with reference to the cranial nerves pertaining to the stomatognathic system. While addressing body regions and the organs and systems therein, particular attention will also be given to highlighting the possible clinical implications resulting from the alteration of normal anatomy. The educational activity aims for the student to achieve both macroscopic morphological and microscopic structural knowledge of the human body, relative to all apparatuses and systems</i></p>
Prerequisites	<p><i>For a fruitful study and for adequate comprehension of the educational materials, it is noted that the following prerequisite is required: knowledge of human histology and embryology.</i></p>

Teaching Methods	<p><i>The teaching methodology of the course is structured around frontal lectures aided by the projection of images. In the Human Anatomy course, all topics listed in the program are covered in order to provide students with a comprehensive understanding of essential knowledge for the formation of future medical professionals, along with a correct study method.</i></p> <p><i>Frontal teaching delivered by course instructors is complemented by professional activities focused on macroscopic and microscopic anatomy topics.</i></p>
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Expected Learning Outcomes	<p><i>The Human Anatomy course aims to present the anatomical-functional characterization of the human body both at macroscopic and microscopic levels, including ultrastructural dimensions.</i></p> <p><i>At the end of the course, the student should be familiar with the essential morphological and biomechanical characteristics, the functioning modes, and the general control mechanisms of the systems, apparatuses, organs, tissues, and cells of the human body, as well as their main morpho-functional correlates under normal conditions.</i></p> <p>Knowledge and understanding - (Dublin Descriptor 1) <i>Upon completion of the course, the student knows and understands the morphology, structural, and functional organization of the human body at macroscopic, microscopic, and ultrastructural levels of systems and organs.</i></p> <p>Applied knowledge and understanding - (Dublin Descriptor 2) <i>At the end of the course, the student possesses the ability to link the macroscopic, structural, and ultrastructural organization of systems, apparatuses, and organs with their corresponding functions. The student recognizes the macroscopic structure of systems and organs, connecting it with the notions of surface anatomy and topographic anatomy, They identify and interpret anatomical regions and structures.</i></p> <p>Autonomy of judgment - (Dublin Descriptor 3) <i>At the end of the course, the student will have the ability to integrate their anatomical knowledge, managing its complexity. The student will be able to formulate judgments on anatomical alterations and their implications in the main physiopathological processes leading to the most common pathological states.</i></p> <p>Communicative skills - (Dublin Descriptor 4) <i>At the end of the course, the student will have the ability to describe and explain</i></p>
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	<p><i>the normal morphology and structure of the human body, also being able to effectively use the communicative tools typical of publications and scientific communications.</i></p> <p>Learning ability - (Dublin Descriptor 5)</p> <p><i>At the end of the course, the student will have acquired the ability for autonomous updating on the contents of human anatomy, using the updating methodologies specific to scientific investigation in the biomedical field.</i></p>
<p>Teaching Contents</p>	<p>General Anatomy</p> <p><i>Definitions</i></p> <p><i>Normal human anatomy, systematic anatomy, and topographic anatomy. Tissues, multi-tissue units, organs. Organic systems (or apparatuses): systems of 'relationship life' (or somatic), systems of 'vegetative life' (or visceral).</i></p> <p>General Topographic Anatomy</p> <p><i>Topographic divisions of the human body. General organization of the human body. Types of organization: cavitated and non-cavitated. Examination of layers: superficial layer, deep layer. Superficial spaces. Deep spaces: serous spaces, extraserosal spaces. Meningeal spaces.</i></p> <p>General Systematic Anatomy</p> <p><i>Musculoskeletal system (or osteo-articular-muscular). Generalities on bones, generalities on joints. Joints by contiguity (or diarthrosis), joints by continuity (or synarthrosis). Generalities on skeletal muscles. Vascular (circulatory) systems: blood vascular system, large circulation (systemic or general circulation), small circulation (pulmonary circulation). Lymphatic vascular system: hemolymphopoietic and immune systems. Digestive system: alimentary canal, accessory glands of the alimentary canal. Respiratory system: airways (or respiratory), lungs. Urinary system: kidney, urinary tract. Genital (or reproductive) systems: gonads, genital tracts. Endocrine system. Nervous system.</i></p> <p>Macroscopic Anatomy</p> <p>Head.</p> <p><i>Surface anatomy and superficial regions. Neural part (or encephalic): fronto-parieto-occipital region, temporal region, auriculomastoid region. Facial part (or splanchnic): eye region, eyelids, conjunctiva, nose region, external nose, nasal vestibule, mouth region, lips, cheeks, mouth vestibule, parotid-masseter region. Macroscopic and microscopic structure of dental elements, deciduous and permanent dentition, chronology of tooth eruption. International nomenclature of dental elements, distinctive morphological characteristics of individual teeth. Dental arches, occlusion and malocclusions. Macroscopic and microscopic structure of periodontal formations: alveolar bone, periodontal ligament, gingiva and cementum</i></p> <p><i>Skeleton (skull). Neurocranium (or cranial box): external examination, neurocranial cavities, vault, base. Splanchnocranium (or facial mass): external examination, splanchnocranial cavities, orbital cavity, nasal fossa, oral cavity (or buccal), infratemporal and pterygopalatine fossae. Temporomandibular joint.</i></p> <p><i>Muscles: skin muscles, skeletal muscles, temporal muscle, masseter muscle, pterygoid muscles. Cavities and deep spaces. Neural part: meninges and intracranial meningeal spaces (or encephalic). Endocranial organs: brain (overview), internal carotid artery (endocranial tract), anterior cerebral artery, middle cerebral artery, vertebral artery (endocranial tract), basilar artery, posterior cerebral artery, arterial polygon of Willis, cerebral veins. Facial part: spaces of the orbital cavity. Ocular bulb fascia, pre- and retro-fascial lodges, ocular bulb and its annexes (overview). Internal nose, nasal fossa, paranasal sinuses, mouth, tongue, sublingual gland, isthmus of the fauces, parotid space, parotid gland, external carotid artery.</i></p> <p><i>Spine (or posterior trunk region).</i></p> <p><i>Surface anatomy and superficial regions: cervical (or nuchal) region, thoracic (or dorsal) region, abdominal-pelvic (or lumbosacral-coccygeal) region.</i></p> <p><i>Skeleton (vertebral column): general characteristics of vertebrae, cervical vertebrae, thoracic vertebrae, lumbar vertebrae, sacrum, coccyx. Intrinsic</i></p>

articulations of the vertebral column: articulations between bodies and between articular processes. Extrinsic articulations of the vertebral column: craniovertebral articulations, costovertebral articulations, sacroiliac joint, vertebral canal.

Muscles: spino-appendicular muscles, trapezius muscle, latissimus dorsi muscle, spino-costal muscles, muscles of the vertebral showers.

Cavities and deep spaces: spinal meninges and spinal meningeal spaces, spinal cord, spinal nerve roots (overview).

Neck

Surface anatomy and superficial regions: suprahyoid region, infrahyoid region, carotid region (or sternocleidomastoid), supraclavicular region.

Walls: anterior and lateral walls. Cervical fascia: superficial, middle, and deep.

Suprahyoid muscles, hyoid bone, sternocleidomastoid muscle, infrahyoid muscles, scalene muscles. Posterior wall: cervical vertebral column, deep cervical fascia and prevertebral muscles. Deep spaces: submandibular space, submandibular gland. Median odd visceral space: thyroid and parathyroid glands, larynx, trachea (cervical tract), pharynx, oesophagus (cervical tract). Retropharyngeal space. Sympathetic (cervical tract) (overview). Vasculonervous space (or carotid): right common carotid artery and cervical tract of the left, internal carotid artery (cervical tract), internal jugular vein, vagus nerve (cervical tract), deep lateral cervical lymph nodes.

Thorax

Surface anatomy and superficial regions: sternal region, costal region, breast.

Walls. Anterior and lateral walls: sternum and ribs, sternocostal joints, thoraco-appendicular muscles, intrinsic chest muscles, intercostal spaces and their contents. Posterior wall: thoracic vertebral column. Lower wall: diaphragm.

Cavities. Mediastinum: divisions. Vascular organ systems: heart, thoracic aorta, ascending, coronary arteries, arch, brachiocephalic trunk (or brachiocephalic trunk), left common carotid artery (thoracic portion), left subclavian artery (thoracic portion), descending, superior vena cava, brachiocephalic veins (or brachiocephalic veins), azygos vein system, inferior vena cava (thoracic portion), pulmonary artery, pulmonary veins, thoracic duct (thoracic portion).

Airways and alimentary canal organs: trachea (thoracic portion), main bronchi, oesophagus (thoracic portion), nervous system organs, phrenic nerve (thoracic portion) (overview), vagus nerve (thoracic portion) (overview), sympathetic (thoracic portion), splanchnic nerves (overview).

Pleuro-pulmonary space: pleura, lung.

Abdomen-pelvis-perineum

Surface anatomy and superficial regions: sterno-costal-pubic region (epigastrium, mesogastrium, hypogastrium), costal-iliac region (flank), inguino-abdominal region (iliac fossa),.

Walls.

Anterior and lateral walls: rectus muscle, external oblique muscle, internal oblique muscle, transverse muscle, inguinal canal. Posterior wall: lumbo-sacral-coccygeal vertebral column, pelvic bone, posterior wall muscles and fasciae, iliopsoas muscle, quadratus lumborum muscle, pelvic floor muscles and fasciae,

Abdominal cavity. Peritoneal space: large cavity. Supramesocolic compartment: liver, extrahepatic bile ducts, stomach, duodenum (upper portion) (or bulb), spleen, transverse mesocolon, transverse colon. Submesocolic compartment: mesenteric small intestine, cecum, vermiform appendix, ilio-pelvic colon (or sigmoid). Retroperitoneal space: duodenum (descending, transverse and ascending tracts), pancreas, renal fascia, kidney, adrenal gland, renal pelvis (or renal basin), ureter (abdominal tract), ascending and descending colon, descending aorta (abdominal tract), celiac artery, left gastric artery, splenic artery, common hepatic artery, superior and inferior mesenteric arteries, common and external iliac arteries, inferior vena cava (abdominal tract), common and external iliac veins, portal vein, sympathetic (lumbar tract), celiac and aorto-abdominal plexuses (overview), retroperitoneal lymphatic vessels and nodes. Subperitoneal space: urinary bladder, ureter (pelvic tract), rectum (pelvic tract or

	<p>anal canal), urethra (pelvic tract), prostate, deferent duct (pelvic tract), seminal vesicle, ejaculatory duct. Internal iliac artery (or hypogastric), internal iliac vein (or hypogastric), subperitoneal lymphatic vessels and nodes, sympathetic (sacrococcygeal tract) (overview). Perineal spaces: - anterior part.</p> <p>CENTRAL NERVOUS SYSTEM FUNCTIONAL ORGANIZATION OF THE NERVOUS TISSUE.</p> <p>Neurons, neuroglia, synapses and nervous circuits. Organization of gray matter and white matter.</p> <p>NERVOUS CIRCUITS. Morphology and general organization of the central nervous system.</p> <p>AFFERENCES TO THE NEVRASSE: pathways of general and special somatic sensitivity; exteroceptive sensitivity and its classifications, visceral sensitivity, proprioceptive sensitivity and structure of the neuromuscular spindle.</p> <p>EFFECTOR SYSTEMS (motors) and efferent control devices: descending pathways of motion (pyramidal pathway and extrapyramidal pathways).</p> <p>DEFINITION AND PARTS COMPOSITION OF THE CNS; external morphology and relationships, internal configuration, organization and connections of the gray and white matter of the Spinal Cord, Brainstem, Cerebellum, Diencephalon, Telencephalon.</p> <p>SPINAL CORD: External and internal configuration. Roots of the spinal nerves. Peripheral endings of effector nerves, neuromuscular plate and sensory corpuscles. Spinal ganglia.</p> <p>BRAIN STEM: Bulb. Bridge. Mid-brain. External configuration and reports. The reticular formation, IV ventricle, cerebral and cerebellar peduncles, quadrigeminal lamina, mesencephalic aqueduct.</p> <p>CEREBELLUM: External and internal configuration, structure and architecture of the cerebellar cortex. Gray nuclei.</p> <p>DIENCEPHALON: Conformation and limits. III ventricle, subdivision of the diencephalon: thalamus and hypothalamus.</p> <p>TELENCEPHALON: General conformation. Fissures, lobes, convolutions, cortex, brain areas. Lateral ventricles. Subcortical nuclei of the telencephalon, organization of the white matter and capsules. Main commissural systems of the telencephalon. Limbic system. Vascularization of the brain.</p> <p>PERIPHERAL NERVOUS SYSTEM</p> <p>GENERAL INFORMATION: Structure of nerves, nerve fibers and ganglia.</p> <p>SPINAL NERVES: definition, constitution, location, course; metamerism; posterior and anterior branches of the spinal nerves; plexuses and main terminal branches.</p> <p>ENCEPHAL NERVES: fiber content, course and territory of distribution of the encephalic nerves and their main branches: value and location of the ganglia attached to the encephalic nerves. Notes on clinical anatomy. Organization and constitution of the encephalic nerves of odontostomatological interest: oculomotor, trigeminal, facial, vagus.</p> <p>VEGETATIVE OR AUTONOMOUS NERVOUS SYSTEM: General organization; neural centers; peripheral organs: preganglionic and postganglionic fiber; orthosympathetic, parasympathetic.</p> <p>.</p>
<p>Texts</p>	<p>Anatomia umana – Fondamenti Barbatelli et al. – edi-ermes</p> <p>ANATOMIA FUNZIONALE E CLINICA DELLO SPLANCNOCRANIO Luciano Fonzi. – edi-ermes</p> <p>Anatomia orale di Sicher Dubrul Lloyd E. -Edit- Martina</p> <p>NETTER. ATLANTE DI ANATOMIA UMANA – edra</p> <p>ATLANTE FOTOGRAFICO DI ANATOMIA UMANA. Edizione italiana – Rohen W. et</p>

	<i>al - Piccin</i>
Notes on the reference texts	
Teaching material	<i>It is possible to retrieve the teaching material on the Teams channel (11dfn3u) for Sabrina Lisi and for Margherita Sisto: odj07pn</i>

Assessment	
Methods of verifying learning	<p><i>The assessment methods are organized to evaluate the active participation of students in the lectures through direct interaction between the teacher and the students. During the lectures, students constantly interact to clarify or deepen the concepts presented, and the teacher asks students questions related to the subject matter of the lesson according to the Problem-Based Learning methodology, aiming to assess the effectiveness of learning in real time and to stimulate their interest in further exploration of the subject.</i></p> <p>Assessment method <i>Oral exam.</i></p>
Evaluation criteria	<p>Criteria for evaluation take into account the level of understanding of the subject matter, clarity of presentation, language proficiency, use of anatomical terminology, and ability to establish logical connections between topics.</p> <p>Knowledge and understanding: At the end of the course, the student will be able to describe and understand: Anatomical terminology. General concepts of anatomical structures: a. Skin, fascia, bones, joints, and skeletal muscles. b. Viscera, serous membranes. c. Vessels and nerves (somatic and visceral). The organization, both macroscopic and microscopic, of anatomical structures. Systematic anatomy (morphology, structure, vascularization, innervation) of various organs and systems. The subdivision of the human body into regions. Topographic anatomy (position and relationships) of formations in a specific anatomical region. Generalities and principles of organogenesis of major systems. The correlation between organ structure and their functions. The anatomical basis of clinical anatomy. Microscopic, topographic, and surface anatomy of different anatomical districts.</p> <p>Applied knowledge and understanding: At the end of the course, the student will have developed the following skills to: identify, correlate, and interpret: a. Surface landmarks in the living body; b. Anatomical structures in their dynamics; c. Macroscopic anatomy of sections of normal visceral organs; d. Anatomy by sections of the human body in different planes; e. Normal anatomical formations in radiological images; f. Microstructures of organs under the light microscope.</p> <p>Autonomy of judgment: At the end of the course, the student will have developed the following skills to: reason both systematically and topographically, being able to interpret problems arising from morphological investigations in living beings. identify the anatomical knowledge underlying basic clinical problems. Communication skills: The student must be able to describe and explain the contents of the teaching program using appropriate language.</p> <p>Ability to learn: The student must have developed the ability to reason both systematically and topographically, being able to interpret problems arising from morphological investigations in living beings.</p>

<p>Criteria for measuring learning and assigning the final grade</p>	<p><i>Grade 29-30 with honours: The student has a DEEP understanding of the subject, excellent communication skills, and mastery of medical-scientific language.</i></p> <p><i>Grade 26-28: The student has a GOOD understanding of the subject and presents the topics clearly using appropriate medical-scientific language.</i></p> <p><i>Grade 22-25: The student has a FAIR understanding of the subject, albeit limited to the main topics, and presents the topics fairly clearly with moderate language proficiency.</i></p> <p><i>Grade 18-21: The student has a MINIMAL understanding of the subject and presents the topics sufficiently clearly, although language proficiency is underdeveloped.</i></p> <p><i>Exam not passed: the student DOES NOT HAVE THE MINIMUM KNOWLEDGE required of the main contents of the course. The ability to use specific language is very poor or nonexistent, and they are unable to independently apply the acquired knowledge.</i></p>
<p>Other</p>	<p>.</p>
<p></p>	<p>.</p>