



## COURSE OF STUDY Attività Motorie e Sportive

### ACADEMIC YEAR 2023/2024

### ACADEMIC SUBJECT Human Anatomy

General information	
Year of the course	1 Year
Academic calendar (starting and ending date)	1 Term
Credits (CFU/ETCS):	5
SSD	BIO/16
Language	Italian
Mode of attendance	Not Mandatory

Professor/ Lecturer	
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Department and address	CUS Bari
Virtual room	5t5fbtd
Office Hours (and modalities: e.g., by appointment, on line, etc.)	Any working day by: <i>l'istituto di Anatomia Umana e Istologia, primo piano, Policlinico di Bari, ingresso via Storelli, previo appuntamento da concordare</i>

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
100	50		50
CFU/ETCS<			
5	5		

<b>Learning Objectives</b>	The teaching contributes to the achievement of the educational objectives of the Bachelor of Science in Sports and Sports Activities by providing the student/ a student with the knowledge and a good foundation of understanding the field of the subject. Through the basic knowledge of human anatomy, starting from the general principles to arrive at the precise description of the apparatuses and systems of the human organism, the course aims to provide the learner with basic skills related to the organization and functioning of the human body that will allow him to complete his training and make his own technical and teaching skills related to motor activities and sports
<b>Course prerequisites</b>	Human Anatomy is a teaching of the first year, first semester, there are no specific prerequisites different from those required for access to the degree program

<b>Teaching strategie</b>	The course is divided into lectures with the help of the projection of images. During the course, all the topics in the program are treated in order to provide the student with a complete framework of knowledge essential for the training of a future
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	specialist in the sciences of sports and sports activities together with a correct method of study.
<b>Expected learning outcomes in terms of</b>	
<b>Knowledge and understanding on:</b>	<ul style="list-style-type: none"> <li>• knowledge of anatomical terms useful for the recognition and macroscopic and microscopic description of organs as well as their organization within the human organism.</li> <li>• In-depth knowledge of the anatomo-functional characteristics of the joints, the periarticular apparatus and the muscular and skeletal component of the human body</li> </ul>
<b>Applying knowledge and understanding on:</b>	<ul style="list-style-type: none"> <li>• Be able to describe and comment on the knowledge acquired, adapting the communication canons to the interlocutors and purposes.</li> <li>• Appropriate use of anatomical terminology.</li> <li>• Ability of personal deepening of the topics treated in class, through the consultation of Texts and atlases of Human Anatomy as well as orient themselves during the use of virtual atlases of anatomy in 3D.</li> </ul>
<b>Soft skills</b>	<ul style="list-style-type: none"> <li>• <i>Making informed judgments and choices</i> <ul style="list-style-type: none"> <li>• <i>Knowing how to use the reference lines, which are conventionally made to pass through very precise points of the human body in order to localize anatomical structures in a healthy subject.</i></li> <li>• <i>Knowing how to identify and localize all the components of the osteo-muscular system in a subject and contextualize them within the disciplines characterizing to enhance and develop specific types of intervention through movement.</i></li> <li>• <i>Knowing how to identify the educational devices proposed by general and mutual teaching in learning the teaching of motor activities.</i></li> <li>• <i>Knowing how to identify the main theoretical frameworks from which the motor sciences have drawn reference and show that you have achieved an overall critical vision of the relationship between body and movement.</i></li> </ul> </li> <li>• <i>Communicating knowledge and understanding</i> <i>At the end of the course the student will have the ability to describe and explain the normal morphology and structure of the human body, also knowing how to effectively use the communication tools of scientific publications and communications</i></li> <li>• <i>Capacities to continue learning</i> The student must develop skills that allow him to examine and understand scientific texts of Human Anatomy or in which the notions of human anatomy are mentioned independently, in order to use them in everyday contexts for the profession and for research. Finally, the student must show the ability to use the concepts and knowledge acquired by demonstrating reasoning according to the specific logic of the discipline.</li> </ul>
<b>Syllabus</b>	
<b>Content knowledge</b>	<p>INTRODUCTION TO THE STUDY OF ANATOMY</p> <ul style="list-style-type: none"> <li>• Levels of organization of the human body: cellular, tissue, organ and apparatus.</li> </ul> <p>Tissue Level: Epithelia of lining:</p> <ul style="list-style-type: none"> <li>• Classification , localization and structure of epithelia: simple pavement epithelium, epithelium simple cubic, simple cylindrical epithelium,pseudostratified epithelium,paved epithelium multi-layered, multi-layered cubic and cylindrical epithelium, transitional epithelium.Cytological characteristics of epithelial cells. Specializations of the apical surface.Cellular junctions Glandular epithelia: Structure and organization of the glands Exocrine; Classification of</li> </ul>



	<p>exocrine glands according to cellular complexity, to the seat, to the mode and type of secretion, to adenomere morphology and the excretory duct. Examples: Glands Gastric, Intestinal, Sweat, Sebaceous, Exocrine Pancreas and gh. Mammary. Structural organization of the endocrine glands; Main endocrine glands: pituitary, thyroid, parathyroid, pituitary, adrenal glands, endocrine pancreas.</p> <ul style="list-style-type: none"> <li>• Connective tissues: classification and functions of connective tissues; tissue composition</li> </ul> <p>connective: extracellular matrix, cellular component (fibroblasts and fibrocytes, macrophages, mast cells, fat cells, plasma cells) connective tissues proper: tissue loose fibrillar connective tissue, dense fibrillar connective tissue, elastic connective tissue, mature mucosal tissue, adipose tissue ; Cartilaginous tissue:</p> <p>Cartilage histogenesis, hyaline cartilage, elastic cartilage, fibrous cartilage. Tissue bone, bone tissue cells: osteoblasts, osteocytes, osteoclasts, bone matrix, non-lamellar bone tissue, lamellar bone tissue, spongy bone tissue, bone tissue compact, ossification hints, intramembranous ossification, endocral ossification. Blood and lymphoid tissue: general characteristics and functions of the blood, composition of the blood: description and functions of the figured elements erythrocytes lymphocytes granulocytes( neutrophils, eosinophils, basophiles)</p> <p>structure and functions of immunoglobulins, hints on the proteins of the complement system.</p> <p>Hints of immunity: innate immunity, acquired immunity</p> <ul style="list-style-type: none"> <li>• Muscle tissue: classification and functions of muscle tissues, striated muscle tissue skeletal, muscle fibre, description of sarcomer, contraction process, tissue cardiac striated muscle, cardiomyocytes, smooth muscle tissue, localization, smooth muscle fibrocell.</li> <li>• Nervous Tissue: classification and functions of nervous tissue, tissue composition nerve neuron, signs on glia cells: oligodendrocytes, schwann cells, cells satellites</li> </ul> <p><b>GENERAL AND APPLIED ANATOMY</b></p> <p>Anatomical terminology: anatomical position; body planes and sections planes; terms of position and movement. Body cavity; topographical subdivision of the dorsal cavity and the ventral cavity. General structure of hollow organs and full organs.</p> <p><b>LOCOMOTOR APPARATUS</b></p> <ul style="list-style-type: none"> <li>• Skeleton organization. Morphological classification of bones (long, short, flat, irregular). The joints (synarthrosis and diarthrosis); morphology of a articulation type: capsules, ligaments, sinovia. Major joints of the upper limb and lower. Head skeleton: neurocranium and splancnocranium. The spine. Skeleton of the chest. The skeleton of the upper limb: shoulder girdle, arm skeleton, forearm and hand. The skeleton of the lower limb: pelvic girdle, skeleton of the thigh, leg and foot.</li> <li>• Muscular system: general organisation; muscle anchorage sites ( origin and insertion); criteria of structural and functional classification of muscles, antero lateral neck, respiratory muscles, muscles, aponeurosis, lateral antero wall bands</li> </ul>
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	<p>abdominal muscles of the posterior abdominal wall muscles and perineum bands (i.e. muscles and small pelvic fascia), upper limb muscles, lower limb muscles, muscles of the dorsal region.</p> <p><b>CARDIOVASCULAR AND LYMPHATIC SYSTEM</b> General organization. Macroscopic and microscopic anatomy of the heart, hints on the conduction system, fibrous skeleton, heart valves and cardiac cycle. The pericardium. The large and small circulation. Arteries: the aorta (origin and course) and main collateral branches and terminal branches. Willis polygon. Veins: Main venous branches. Circle portal. Structure of blood vessels (arteries, veins, capillaries and sinusoids). Hints on circulation of blood in the fetus at term and changes that occur at birth. Role of the lymphatic system in the defense of the organism. Lymph. Structure and function of vessels lymphatic, organization of lymphatic circulation. Information on the structure and function of the medulla bone, thymus, spleen and lymph nodes</p> <p><b>RESPIRATORY SYSTEM</b> nasal cavities, larynx, trachea and bronchi. The intrapulmonary bronchial tree. The lungs. The pleura.</p> <p><b>DIGESTIVE SYSTEM</b> oral cavity, tongue and teeth. Major salivary glands (parotid, submandibular, sublingual), pharynx, esophagus, stomach and intestines. The liver, the bile ducts intra and extrahepatic. The gallbladder. The pancreas. The peritoneum and the main formationsperitoneal.</p> <p><b>URINARY TRACT</b> kidney, nephron, juxtaglomerular apparatus, urinary tract ( renal calyces and pelvis, ureters, bladder urinary, male and female urethra). Overview of kidney vascularity</p> <p><b>MALE AND FEMALE GENITAL SYSTEM</b> testicles, spermatic pathways, glands attached to the spermatic tract, male external genitalia ovaries, genital tract, female external genitalia</p> <p><b>NERVOUS SYSTEM</b> general principles of neuroanatomy. Neuronal chains. Anatomical organization of the System Nervous. General and specific sensitivity. Generality on skin receptors. Structure and function of the neuromuscular spindles and tendon muscle organs of the Golgi. General organization of the CNS. Spinal cord: macroscopic configuration. Internal conformation. Architecture of the grey matter and white matter. Function of the spinal cord. Outline of the major pathways sensitive and motor. Reflex arc (receptor, afferent branch, efferent branch, organ effector); spinal reflexes. Hints on the brain stem (bulb, Varolio bridge and midbrain). Cerebellum: outline of the external configuration and internal organization; structure of the cerebellar cortex and functions of the cerebellum. Diencephalus:hints.</p>
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	<p>Telencephalus: Notes on external configuration, inter-hemispherical commissural formations, the capsule system, nuclei of the base, telencephalic cortex. Sensitive and motor cortical areas. Ventricular system cerebral (ependymal canal, IV ventricle, III ventricle and lateral ventricles) and fluid cefalorachidian. The spinal and encephalic meninges. The brain blood barrier. System peripheral nervous: constitution of the spinal nerve, ganglia, generalities on the spinal plexuses. Generality on cranial nerves. General information on the vegetative nervous system: organization and function of the orthosympathetic and the parasympathetic</p>
<b>Texts and readings</b>	<ul style="list-style-type: none"> <li>• “Anatomia Umana”. Martini, Timmons, Tallitsch; EdiSES</li> <li>• “Anatomia Umana”. Kenneth S. Saladin; Piccin-Nuova Libreria</li> <li>• “Elementi di Istologia e cenni di embriologia”. A. Filippini; Piccin-Nuova Libreria</li> </ul>
<b>Notes, additional materials</b>	Excellent iconography for all texts to be stored and reproduced on paper for form and recall a three-dimensional vision of the organs
<b>Repository</b>	School of Medicine e-learning system

<b>Assessment</b>	
<b>Assessment methods</b>	<p>At the end of the course learning will be evaluated through a written exam, in the presence of the teacher of the course, relating to all the topics covered in the teaching. The test will be divided into two parts: a first part consisting of 10 short-answer questions concerning histology and 2 open-ended questions, one concerning the osteoarthromuscular system and the other the description of an organ or of the generalities of an apparatus.</p> <p>The time available to complete the exam is one hour and thirty minutes. It is necessary to achieve the sufficiency in all parts to pass the exam.</p> <p>The teacher of the course will communicate the outcome of the exam through the ESSE3 system</p>
<b>Assessment criteria</b>	<ul style="list-style-type: none"> <li>• <b>Knowledge and understanding</b> <ul style="list-style-type: none"> <li>• Know basic and specific anatomical terminology.</li> <li>• understand the complexity of the human organism, its fundamental components and the relationships that exist between the different anatomical structures</li> <li>• know the basic principles of the scientific method and some of the processes through which scientific knowledge in the field of anatomy has been acquired</li> </ul> </li> <li>• <b>Applying knowledge and understanding</b> <ul style="list-style-type: none"> <li>• catalog the systems and systems that make up the body from the point of view of macroscopic and microscopic anatomy.</li> <li>• recognize and localize the main anatomical structures, associate them to the different apparatuses and systems giving their anatomo-functional connotation</li> </ul> </li> <li>• <b>Autonomy of judgment</b> <ul style="list-style-type: none"> <li>• linking the different anatomical parts of the human body according to a structural link</li> <li>• make general assessments of the anatomical aspects of the human body</li> </ul> </li> <li>• <b>Communicating knowledge and understanding</b> <ul style="list-style-type: none"> <li>• use specific anatomical terminology that will allow him to communicate within a multidisciplinary scientific field.</li> <li>• convey the concepts learned in the professional field and in teaching</li> </ul> </li> <li>• <b>Communication skills</b> <ul style="list-style-type: none"> <li>tools and knowledge that allow to operate</li> </ul> </li> </ul>



	<i>effectively in the field of motor science</i>
Final exam and grading criteria	<i>The student must demonstrate knowledge of the topics under study and have understood the issues related to them, as well as to have reached a level of knowledge to develop independently interpretative arguments 1) Failure to pass the test: insufficient knowledge of the course contents, insufficient evaluation and reasoning skills, lack of basic knowledge. 2) 18 to 21: sufficient or barely sufficient preparation; minimum knowledge of the institutions and of the problems tackled during the course; presence of minor gaps; 3) 22 to 24: average preparation characterized by no particular deepening and by gaps that can be filled in the continuation of the overall training; 4) 25 to 27: generally good preparation even if not particularly thorough; technical language and adequate expressive ability; 5) 28 to 30: excellent or excellent preparation; precise and precise technical language and expressive ability; 6) 30 e lode: preparation, technical language, expressive and argumentative skills of the highest level</i>
<b>Further information</b>	
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