Department of Biomedical Sciences
Physiotherapy Degree Programme
Human Anatomy Course

characteristics of skeletal muscle tissue: describe the mechanisms of contraction and relaxation of muscle tissue; define the motor unit and explain its control by a single motor neuron; describe the structural and functional characteristics of cardiac muscle tissue; describe the structural and functional characteristics of smooth muscle tissue.

5. Adipose tissue

Describe the general characteristics of adipose tissue; describe the structural and functional characteristics of white adipose tissue; describe the structural and functional characteristics of brown adipose tissue.

6. Blood

Describe the composition of blood and the processes of haematopoiesis and erythropoiesis; list the cells that represent the cellular component of blood and describe their main characteristics and functions; describe the process of haemostasis.

7. Lymphoid organs

Describe the structural and functional characteristics of lymphoid organs; list the different lymphoid organs: spleen, thymus, lymph nodes and tonsils; describe the structural and functional characteristics of mucosa-associated lymphoid tissue (MALT).

8. The endocrine system

Describe the structural and functional characteristics of the endocrine glands; describe the organs that make up the endocrine system, their structure and function.

9. Introduction to nervous tissue

Describe the general organisation of the nervous system; describe the morphology of nerve cells and their functional and structural characteristics; describe synapses and the transmission of electrical and chemical signals between neurons; describe the cellular non-neuronal component: characteristics and functions of glial cells; describe the structure and function of the blood-brain barrier.

ANATOMY OF THE MUSCULOSKELETAL SYSTEM (2 ECTS)	
Dr Lara Castagnetti	**Lara Castagnetti -** Surgeon, specialist in Physical Medicine and Rehabilitation, and osteopath. She works at the Department of Rehabilitation and Functional Recovery - Orthopaedic Rehabilitation at Humanitas Hospital in Rozzano. E-mail: lara.castagnetti@humanitas.it
Objectives	The module aims t

Objectives	Acquire terminology useful in the health profession for effective communication in the field of anatomy and physiology. Recognize anatomical structures in order to contextualise the knowledge acquired in the physiology course. Use knowledge of anatomy to predict physiological consequences. Correct interpretation of anatomical illustrations. Describe, draw and list the main features of the nervous system.
Teaching methods	Lectures, case studies, watching video-clips, practical exercises
Teaching materials	Lecture slides Martini, Timmons, Tallitsch - Anatomia Umana – EdiSES S.G. Waxman – Neuroanatomia Clinica – Piccin

Content

1) Embryogenesis and general aspects of the CNS

The student should acquire sufficient information on embryological development to be able to understand its implications in the organisation of the structures of the adult nervous system with particular reference to: Cellular components and major divisions (functional and anatomical) of the nervous system; directional terms of the brain; neurulation, subdivisions of the brain (

7): Movement control
The student should understand the modulation of movement by the supraxial nerve centres considering the nerve centres responsible for movement; the relationship between motor neurons and muscles; modulation of movement by the basal ganglia and cerebellum.

8) Autonomic nervous system
The student should create a mind map of the location and names of the main constituents of the autonomic nervous system, with particular reference to: anatomical and functional description of the autonomic nervous system; levels of integration and control of the autonomic nervous system

9) Specific senses: smell, taste, hearing
The student will have to create a mind map of the position and names of the main anatomical constituents responsible for specific senses, with particular reference to: general and specific senses; anatomical and functional description of the nerve pathways of specific senses (taste, smell, hearing and sight); anatomical description of the structures inside the ear and along the auditory pathway (vestibular system and auditory system); anatomical and functional description of the nerve pathways of visual senses; layers of the eye and functions of the anatomical structures within each layer

SPLANCHNOLOGY AND THE CARDIOVASCULAR SYSTEM (2 ECTS)	
Dr Silvia Oldani	Specialist in Internal Medicine and Nephrology, works in the Emergency Medicine department at Humanitas hospital in Rozzano. Since 2007 she has been working at the Office of Medical Education as Head of Vocational activities. She has been teaching human anatomy for the Nursing Degree Programme since 2008, the Medicine Degree Programme in English since 2015, and the Physiotherapy Degree Programme since 2016. E-mail: silvia.oldani@humanitas.it
Objectives	Learn the general principles of body composition, with particular emphasis on the structural/functional relationship and functional anatomy of the cardiovascular system. This is in preparation for the understanding of physiology and clinical science and to provide a rational basis for studying physiology and pathology.
Teaching methods	The module consists of lectures
Teaching material	Lecture slides Martini-Timmons -Tallitsch “Anatomia Umana”- EdiSes

Content

1) General aspects and areas of the body
Know the general body composition: the human body as a whole and the identification of its constituent parts. Understand and correctly use anatomical and directional terminology.

2) Respiratory system
Know the shape and location of the organs of the respiratory system and the main structural features that underline their functions: connections between respiratory muscles, thoracic skeleton, rib joints, composition of the pleural space and structure of the lung parenchyma; anatomical bases of phonation; structure of air-blood barrier

3) Digestive system

Know the shape and location of the organs of the digestive system and the main structural features that underline their functions: illustrate the architecture and structure of the mouth cavity, the morphology of teeth and of the dental alveoli joints; define the anatomical mechanism of mastication and swallowing; illustrate the architecture and structure of the digestive tract, highlighting the anatomical basis of digestion, both from an enzymatic and mechanical point of view; highlight the involuntary and voluntary mechanisms of emptying the abdominal viscera, with links to the large muscles of the abdomen (thoracic and abdominal muscles); illustrate the liver with particular reference to the morphology and function of the hepatic lobule; describe the portal vein and its collateral circulation: functional considerations; describe the extrahepatic bile ducts.

4) Genitourinary system
Know the shape and location of the organs of the genitourinary apparatus and the main structural characteristics that underline their functions, illustrate gametogenesis and compare the timing and modalities in the two sexes; describe the stages of spermatogenesis; describe the ovarian cycle and the uterine cycle and their interconnections.

5) Cardiovascular system
Anatomical and functional aspects of the cardiovascular apparatus: external configuration of the heart, anatomical relations and positioning in the thorax; internal configuration of the cardiac cavities; structure and anatomical-functional aspects of the fibrous skeleton and cardiac valves; pathway and functional aspects of the conduction system; vascularisation of the heart; structure and function of the pericardium; radiological anatomy of the cardiac shadow

6) Cardiovascular system: Vascular layout
Where large vessels arise and relations with the structures of the thorax; general organisation of the vessels pathways; functional and trophic pulmonary circulation; arterial and venous vascularisation of the body cavities, skull and limbs; organisation of the lymphatic system

Examination for the Human Anatomy course. Written examination with multiple-choice questions on topics from all modules and oral examination on locomotor system anatomy and nervous system anatomy modules (Chairman of the Examination Committee: Dr. Marco Rasile)