General Information	BACELOR DEGREE IN BIOTECHONOLOGIES
Title of the subject	Histology and organ structure
Degree Course (class)	MEDICAL AND PHARMACEUTICAL BIOTECHNOLOGIES (L-2) INDUSTRIAL AND AGRO-FOOD BIOTECHNOLOGIES (L-2)
ECTS credits	6
Compulsory attendance	Yes
Language	Italian
Academic year	2020/2021

Subject Teacher		
Name and Surname	Antonia Cianciulli	
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Place and time of reception	Sito di Farmacia I piano - stanza 234 or Colloquio su teams By appointment via email	
ECTS credits details	Discipline sector (SSD)	Area
	BIO/16	characterizing

Study plan schedule	Year of study plan	Semester
	I	II

Time management	Lessons	Laboratory	Exercises	Total
CFU	5	1		6
Total hours	125	25		150
In-class study hours	40	12		52
Out-of-class study hours	85	13		98

Syllabus	
Prerequisites / Requirements	
Basic knowledge of cytology and cell biology	
Expected learning outcomes (according to Dublin descriptors)	
Knowledge and understanding	The aim of the course is to provide the student with skills relating to the organization of tissues and the main organs of the human body. Provide the basic knowledge for the description of the general constructive principles of the human body, the organization of the apparatuses and the microscopic and macroscopic structure of the organs relatively to the functional role. Provide skills to learn the use of the optical microscope and for the observation of histological samples.
Applying knowledge	The course aims to provide knowledge of the microscopic and macroscopic organization of the different tissues and apparatuses for understanding the complexity of the human body structures and their functions allowing the student to attend subsequent courses and be useful in the context of the professional figure of biotechnologist.

Making informed judgments and choices	The student must be able to recognize the organs of the human body through the most common methods of anatomical investigation, to understand the relationship between structure and function of tissues and / or organs and be able to evaluate and explain any anomalies affecting organs and systems. Expose the knowledge acquired through an appropriate use of anatomical terminology that will be useful in professional practice.
Communicating knowledge	The lessons and exercises of the course are intended to provide the student with a study method that allows the ability to develop an independent study.
Capacities to continue learning	The aim of the course are intended to provide the student with the ability to continuously update its knowledge using also supplementary sources not necessarily provided by the teacher.
Study Program	
Content	FIRST PART: HISTOLOGY, GENERAL ANATOMY and LOCOMOTOR SYSTEM General information on tissues, role and importance of interactions between cells and extracellular substance in relation to the organization of organs and systems. Organization of the human body tissues: Classification of epithelia; connective tissues proper and adipose tissue; cartilage and bone tissue; blood and lymph; muscle tissue: skeletal, cardiac and smooth; nervous tissue. Organization of the human body: anatomical position, fundamental reference lines and planes, anatomical terminology, body cavities. Osteogenesis. Osteology: internal structure, external morphology and classification of bones, axial skeleton, appendicular skeleton, differences between male and female skeleton. Arthrology: Structural and functional classification of the joints, movements of the synovial joints. Myology: structure and function of skeletal muscles. Skeleton, joints and muscles of the head, trunk and limbs. SECOND PART: SPLANCNOLOGY Of all the organs it is necessary to know: general morphology, position, structure and morpho-functional references. CIRCULATORY AND LYMPHATIC SYSTEM. Heart and pericardium, arteries, veins and capillaries, meaning of vascular anastomoses and collateral circulation. Small circulation and large circulation. Vessels and lymphatic organs. DIGESTIVE SYSTEM: Oral cavity, tongue, salivary glands, pharynx, esophagus, stomach, small intestine, large intestine, liver, pancreas. Peritoneum. RESPIRATORY SYSTEM: Nasal cavities and paranasal sinuses, larynx, trachea, bronchi, lungs. Pleure. GENITO-URINARY SYSTEM: Kidney, ureter, bladder, male and female urethra. Gonadi. ENDOCRINE SYSTEM: General notions on: pituitary, thyroid, parathyroid, adrenal, endocrine pancreas. THIRD PART: NEUROANATOMY Central nervous system. Generalities on cranial and spinal nerves of the peripheral nervous system. Autonomous nervous system. Sensory organs.
Bibliography and textbooks	Anatomia umana e istologia (P. Carinci, E. Gaudio, G. Marinozzi) Principi di Anatomia Umana (Tortora- Ambrosiana) Anatomia Umana (Martini, Timmons- Edises) Anatomia Umana (McKinley- Piccin)

	Atlante Netter di Anatomia Umana Edra Atlante di Anatomia Umana (Anastasi G.- Gaudio E. - Tacchetti C.- Edi-Ermes)
Notes to textbooks	The recommended texts can be integrated with other material suggested by the teacher during the lessons. The PowerPoint of the lessons are available only as a study support.
Teaching methods	Lessons with the use of Power Point and exercises by viewing histological preparations and support of 3D anatomical models to allow the recognition of the structural characteristics of the main organs of the human body.
Assessment methods (oral, written, ongoing assessment)	Oral
Evaluation criteria (describe criteria for each of the above expected outcomes)	The final oral evaluation on topics of Histology and Anatomy will ensure the acquisition of the course contents, the understanding and acquisition of the anatomical terminology of position and movement, the knowledge of the main morpho-functional characteristics of the systems.
Further information	

Dott.ssa Antonia Cianciulli