COURSE OF STUDY CHEMISTRY AND PHARMACEUTICAL TECHNOLOGIES
ACADEMIC YEAR *2023 - 2024*
ACADEMIC SUBJECT Animal cell biology and human anatomy (11 CFU)
Human Anatomy module (6 CFU)

General information	
Year of the course	I year
Academic calendar (starting and ending date)	II semester (February 2024 – June 2024)
Credits (CFU/ETCS):	6
SSD	Human Anatomy – BIO/16
Language	Italian
Mode of attendance	Mandatory

Professor/ Lecturer	
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Virtual room	Microsoft teams codice bh0ev8g
Office Hours	Every day (appointment via e-mail)

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
150	40	15	95
6	5	1	

Learning Objectives	The Course of Studies (CdS) in Pharmaceutical Chemistry and Technology (CTF) provides the student with training aimed at acquiring knowledge and skills aimed at professional practice in the industrial pharmaceutical field, from research to production, formulation, analysis of the drug and regulation and management of the distribution chain.
Course prerequisites	Basic knowledge of the morpho-functional characteristics of the animal cell and cell biology.

Teaching strategie	Theoretical frontal lessons supported by the use of Power Point presentations. Classroom exercises in Microscopic Anatomy and Macroscopic Anatomy in order to understand the organization of anatomical structures. 3D anatomical models will also be used to allow students the morphological recognition of the main organs of the human body and the description of their topographic relationships and structural characteristics.
Expected learning outcomes in terms of	
Knowledge and understanding	The aim of the course is to provide the student with the basic knowledge to

on:	describe: ○ the general constructive principles of the human body ○ the organization of organs and systems ○ the topographical relationships between the various organs of the human body ○ the relationship between the different anatomical structures and the functions they perform
Applying knowledge and understanding on:	Provide the basic knowledge of the microscopic and macroscopic organization of the different structures of the different organs useful for understanding the complexity of the human body as well as their functions, allowing the student to deal with the subsequent courses in the biological area and being useful in the context of the professional figure.
Soft skills	• Making informed judgments and choices The student must be able to recognize the organs of the human body, acquiring critical skills relating to the structural organization of the various systems of the human body and their function, in order to understand the relationship between structure and function of the organs and be able to evaluate and interpret any anomalies affecting organs and systems. • Communicating knowledge and understanding The student must be able to present the knowledge acquired through an appropriate use of anatomical terminology that will be useful in professional practice. • Capacities to continue learning ○ 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 and the ability to continuously update their knowledge using also supplementary sources which are independently consulted.
Syllabus	
Content knowledge	Organization of the human body. The ways of organizing the tissues: lining and glandular epithelia; connective tissues proper and adipose tissue; supporting tissues, cartilage and bone; blood and lymph; muscle tissue: skeletal, cardiac and smooth; nerve tissue. Anatomical terminology, epithelial and connective membranes of the body, body cavities, structure of hollow and full organs. Integumentary system: skin and skin appendages. Locomotor system: Organization and morpho-functional characteristics of bones, joints and muscles of the axial skeleton and the appendicular skeleton. Cardiovascular system: location, structure and functions of the heart, the pericardium; general information on large and small circulation; the aorta and its main arterial branches; main veins of the venous circulation; structure of blood vessels. Lymphatic system: location, structure and function of the lymphatic vessels and lymphoid organs. Respiratory system: location, structures and function of the airways and lungs. Digestive system: location, structure and function of the digestive tract and related glands. Uropoietic system: location, structures and function of the kidney and urinary tract. Reproductive system: general organization of the male and female genital system. Endocrine system: location, structure and function of the endocrine glands. Nervous system: organization of the central nervous system (CNS) and

	peripheral (PNS). General organization and function of the spinal cord, brain stem, cerebellum, diencephalon and telencephalon. Meninges, cerebral ventricles and CSF. General information on the spinal and cranial nerves. Vegetative nervous system: notes on the organization of the sympathetic and parasympathetic. Sense organs: General information on the organization and function of the visual and auditory apparatus.
Texts and readings	Arcuri C. – Anatomia Umana - Elementi- Edi-ermes Artico M. - Anatomia Umana - Principi- Edi- ermes Gest T. R. - Atlante di anatomia – Piccin Bernhard N. Tilmann - Atlante di Anatomia Umana Zanichelli
Notes, additional materials	It is useful to integrate the consultation of the reference text with that of an atlas text. Possibility of integrating the consultation of texts with the teaching material made available by the teacher.
Repository	

Assessment	
Assessment methods	Oral examination Possible written test at the end of the course (optional)

Assessment criteria	• *Knowledge and understanding*
	  ○ The student will have to show knowledge and understanding of the topographical position, organization and morpho-functional characteristics of the organs and systems of the human body.
	• *Applying knowledge and understanding*
	  ○ During the assessment will be considered the student's ability to have acquired skills and tools in order to demonstrate autonomy of judgment and independent study capacity.
	• *Autonomy of judgment*
	  ○ The student will have to demonstrate the ability to identify the functional correlations between several organs, to expose and synthesize in a logical way the relevant information relating to the organ in question.
	• *Communication skills*
	  ○ The property of language that the student will be able to show in relation to the topics covered will be considered. The student will have to show presentation skills and synthesis skills by adopting precise and adequate terminology in the description of the structures of the human body.
	• *Capacities to continue learning*
	  ○ The student will have to demonstrate the acquisition of a basic knowledge of the microscopic structure and the macroscopic structure of the organs of the human body systems, demonstrating the ability to describe the topics also in a functional key with a high degree of autonomy.

Final exam and grading criteria	The profit assessment is aimed at verifying the level of knowledge of the topics of human anatomy covered during the course. The degree of understanding, the acquisition of the anatomical terminology of position and movement, the knowledge of the main morpho-functional characteristics of the systems and the reasoning ability that highlights the ability to integrate structure and function in the various components of the organism will be assessed. Furthermore, the student's ability to make connections between the various topics of the program and to integrate the knowledge of human anatomy with other biological disciplines will be evaluated, for the purpose of a very high evaluation.
Further information	
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