



CD 8.5.1 DISCIPLINE CURRICULUM FOR UNIVERSITY STUDIES

Edition:	09
Date:	08.09.2021
Page. 1/15	

FACULTY OF PHARMACY

STUDY PROGRAM 0916.1 PHARMACY

DEPARTMENT OF ANATOMY AND CLINICAL ANATOMY

APPROVED

at the meeting of the Commission for Quality Assurance and Evaluation of the Curriculum, Faculty of Pharmacy

Minutes No. 2 of 09.11.2021

Chairman, PharmD, associate professor



Ucu Livia



APPROVED

at the Council meeting of the Faculty of Pharmacy

Minutes No. 3 of 16.12.2021

Dean of Faculty of Pharmacy, PharmD, associate professor



Ciobanu Nicolae



APPROVED

at the meeting of the chair of Anatomy and Clinical Anatomy

Minutes No. 9 of 17.05.2022

Head of chair, PhD, university professor



Catereniuc Ilia

SYLLABUS DISCIPLINE HUMAN ANATOMY

Integrated studies

Type of course: **Compulsory**

Curriculum elaborat de colectivul de autori:

Catereniuc Ilia, PhD of med., professor

Bendelic Anastasia, dr. of med., university assistant

Chisinau, 2022



CD 8.5.1 DISCIPLINE CURRICULUM FOR UNIVERSITY STUDIES

Edition:	09
Date:	08.09.2021
Page. 2/15	

I. INTRODUCTION

- **General presentation of the discipline: place and role of the discipline in the formation of the specific competences of the professional / specialty training program**

Fundamental disciplines (*as human anatomy, histology, physiology etc.*) are interconnected with pharmaceutical studies in order to promote basic knowledge necessary to learn/ assimilate profile disciplines. Their aim is to prepare the students for major areas of activity as future pharmacist–initiation in the fundamental sciences is necessary for those who will practice in the community and hospital pharmacies.

Specialist in the field of drugs and medicines – pharmacist – has to possess knowledge about structure of human body in order to realize the action of drugs and medicines on organs and organ systems, evolution of the physiological phenomena in the organism etc.

Pharmacy curriculum ensures both foundation material from the fundamental sciences (*disciplines of anatomy, histology, physiology etc. which outline the necessary notions for profile disciplines*) and, pharmacist education and training.

Pharmacy profession is very important for the society, pharmacist together with other allied health care professionals deliver pharmaceutical products and services, promote drug use control in order to obtain maximum therapeutic benefit.

Human Anatomy is an important component of preclinical education and it is one of the oldest fundamental sciences of medical education, which can also be defined as science of the material substrate of the life and health.

Having as the object of research the living human body, Anatomy is an important component of preclinical education that supplies the student with information on the structure of the human body in phylogenesis and ontogenesis, the morphological variability of its structures, development anomalies, age, gender and individual specific features.

The human anatomy course studies the structure of the human body and its component parts at the macro- and mesoscopic levels, as well as their changes conditioned by interaction and interdependence with the other biological systems, which have influenced the formation of the *Homo sapiens* during evolution.

This information is useful for learning the other biomedical sciences, it provides not only basic knowledge about the morphology of human body but facilitates the creation of veritable notions regarding the organism as a whole, in which the structure is influenced by function and vice versa, in close connection with external environment.

- **Mission of the curriculum (aim) in professional training**

The mission of the discipline in the initial professional training in the field of Pharmacy is to offer knowledge about the structure of human body, the morphofunctional features of organs and systems of organs in different periods of postnatal ontogenesis, and to use that knowledge for future learning of the basic, clinical and pharmaceutical disciplines, oriented to prevent various diseases, to diagnose and treat them, to carry out quality professional training and to have competitive specialists on the labor market in the country and abroad.

In this sense, the academic curriculum of the Human Anatomy discipline is focused on the student – the future pharmacist.

- **Languages of the course:** Romanian, Russian, English.
- **Beneficiaries:** First year students, Faculty of Pharmacy, specialty *PHARMACIST*.



CD 8.5.1 DISCIPLINE CURRICULUM FOR UNIVERSITY STUDIES

Edition: 09

Date: 08.09.2021

Page. 3/15

II. A MANAGEMENT OF THE DISCIPLINE

Code of the discipline		F.01.O.004	
Name of the discipline		Human Anatomy	
Person(s) in charge of the discipline		PhD, university professor, Catereniuc Iliia	
Year	I	Semester	I
Total number of hours		120	
Lectures	15	Practical hours	45
Seminars		Self-training	60
Form of assessment	E	Number of credits	4



CD 8.5.1 DISCIPLINE CURRICULUM FOR UNIVERSITY STUDIES

Edition:	09
Date:	08.09.2021
Page. 4/15	

III. TRAINING AIMS WITHIN THE DISCIPLINE

At the end of the course the student will be able:

✓ *at the level of knowledge and understanding to:*

- form clear and accurate ideas about the human anatomy, its evolution and branches, its role and place among the basic and clinical medical disciplines and about anatomy on a living person;
- know traditional and modern methods of anatomical examination;
- gain abilities necessary for professional activity as a pharmacist, directed for knowing and understanding the structure of human body, physiological and pathological mechanisms of functioning of organ systems and apparatuses;
- possess and reproduce information about the human body as a whole unit, its relationships with the environment, its constituent elements (tissues, organs, systems of organs, apparatuses);
- demonstrate knowledge about the essential stages of development of the body, ontogenesis and phylogenesis of organs and systems of organs;
- comprehend and reproduce general definitions about the norm, variants of norm, abnormalities and their applied significance;
- possess and reproduce information about the human body proportions, constitutional types, their applied significance; about the general structural features of the organs and systems of organs, the individual, age, and gender specific features of all anatomical formations;
- possess and reproduce information about individual, age and gender specific features of all anatomical formations at the macro- and mesoscopic levels; about their functions, topography, radiography, ultrasound, MRI, endoscopic methods, and projection on a living person;
- conceive and reproduce the information regarding the histological elements and their role in the application, processing and elimination of the drug substances from the body;
- know International Anatomical Terminology elaborated by FICAT (Federative International Committee on Anatomical Terminology, 1998).

✓ *at the application level to:*

- apply the theoretical knowledge in the professional activity;
- identify anatomical formations and arrange them into anatomical position;
- demonstrate the structural aspects of the body regions (on the dissected corpse), anatomical samples, molds, etc.;
- demonstrate on a living person the projection of the principal anatomical structures (viscera, blood vessels and nerves);
- know and determine the types of constitution of the human body;
- identify anatomical structures on radiological (radiograms, tomography) and sonographic and MRI images;
- palpate on a living person the landmarks of bones, joints and muscles;
- palpate the pulse on the arteries of the head, neck and limbs and indicate their points of compression in order to stop the bleeding;

✓ *at the integration level to:*

- evaluate and appreciate the importance of knowledge in the field of human anatomy in order to acquire basic medical, clinical and pharmaceutical disciplines;
- use information technologies to obtain, evaluate, store, produce, present and share information with colleagues in individual and group work;
- be capable to apply the studied material, that will contribute to the management of the professional activity;
- awareness of the applicability of anatomical knowledge for the professional activity as pharmacist;
- realize the significance of correct interpretation of the results in health status assessment and in the context of cooperation between the pharmacist – physician – laboratory specialist.



CD 8.5.1 DISCIPLINE CURRICULUM FOR UNIVERSITY STUDIES

Edition:	09
Date:	08.09.2021
Page. 5/15	

IV. PRELIMINARY CONDITIONS AND REQUIREMENTS

Anatomy is a fundamental science in medical education, studying the human body and its ontogenetic development, which is closely related to the environmental changes and daily activities of each person.

For successful learning of the discipline it is required to have deep knowledge in the field of biology and anatomy gained during the pre-university studies, as acquaintance with the principles of formation of medical terms based on elementary knowledge of Latin language.

Discipline is oriented to the formation of initial knowledge necessary for future studying of physiology, physiopathology and morphology, pharmacology, clinical pharmacology and others with which anatomy is integrated vertically.

By using the methods, which come to support each physician (palpation, percussion, radiological, endoscopic, CT, ultrasonographic methods and others), anatomy becomes the science of all living forms and it is the basis for other disciplines of medical education, including the vocabulary of over 5000 terms, on which all the other sciences in medical education are based.

Modern medicine does not require from nowadays anatomy an abstract of human body structure and its shape, but real data about the structure of an individual.

Therefore, Anatomy is the science of living forms, of changing and reorganization of the human body. It includes systematization and integration of knowledge about the mutual connection and influence of somatic and visceral systems, about the influence of various external environmental factors on musculoskeletal and visceral activity and on the central nervous system.

For a good comprehension of the discipline, the first year student needs the following skills:

- good level of the language of instruction;
- confirmed competences in the sciences studied at lyceum (biology, chemistry, physics);
- digital competences (use of the Internet, document processing, electronic tables and presentations, use of graphics programs);
- ability to communicate and to work in a team;
- qualities - tolerance, compassion, creativity, initiative, autonomy.



CD 8.5.1 DISCIPLINE CURRICULUM FOR UNIVERSITY STUDIES

Edition:	09
Date:	08.09.2021
Page. 6/15	

V. THEMES AND ESTIMATE ALLOCATION OF HOURS

No	THEME	Number of hours		
		Lec- tures	Practica l hours	Self- training
1.	<i>Introductory course. The importance of knowledge in the field of anatomy and histology for subsequent learning of the clinical and pharmaceutical disciplines. Cell and tissues, general concepts. General histology. Functional anatomy of the locomotor apparatus. Orientation elements of the human body. Parts, segments and regions of the body. General notions about human body constitution. Constitutional types and their morphofunctional peculiarities. Locomotor apparatus – general concepts, components, functional role.</i>	2	3	4
2.	Skeletal system and arthrosyndesmology. Structure of the bones and joints, bone as an organ, functions of the bones and joints. Classification of the bones and joints. Bones and joints of the head and trunk (cranium, vertebral column, thoracic cage). Compartments and components of the cranium. The skull as a whole. Bones and joints of the upper and lower limbs, functional role.		6	8
3.	General notions about muscular system. Classification of the muscles, the external and internal features, muscle as an organ. Muscles, fasciae and topography of the head, neck and trunk. Muscles, fasciae and topography of the upper and lower limbs. TEST. ASSESSMENT		6	8
4.	<i>General splanchnology. Functional anatomy of the internal organs. The age features of the organs of the alimentary, respiratory and urogenital systems. Practical significance of knowledge regarding the morphofunctional aspects of the internal organs in relation to pharmaceutical disciplines.</i> Alimentary (digestive) system – overview, components, functional role. Oral cavity – components, features, functions. Pharynx and oesophagus – features, parts, topography. Stomach – features, topography, functions.	2	3	4
5.	Small and large intestine – features, component parts, topography, functional role.		3	4
6.	Large digestive glands – liver and pancreas – features, topography, functional role. Intra- and extrahepatic bile ways, their features. <i>The digestive system and its role in the application, processing and elimination of the drug substances from the body.</i> Spleen – features, topography, functions. Peritoneum, derivatives.		3	4
7.	<i>Functional anatomy of the endocrine system. Applied relevance of the knowledge in the field of morphology of the endocrine structures for mastering the pharmaceutical disciplines.</i>	2		
8.	Respiratory system – components, features, functional role. Thyroid gland and thymus – features, topography, functions. <i>The respiratory system as object of the impact of drug substances.</i>		3	4
9.	Urinary organs (kidneys, ureters, urinary bladder) – features, topography, abnormalities, examination on a living person. Male and female genital systems – features, topography, abnormalities, examination on a living person. Male and female urethra. Perineum – features, topography, functions. <i>The role of the urinary system in application, processing and elimination of the drug substances from the body.</i> TEST. ASSESSMENT		3	4
10.	<i>Cardiovascular system. Heart. Functional anatomy of the lymphatic and lymphoid systems. Cardiovascular and lymphoid systems and drug substances.</i> Cardiovascular system – heart and blood vessels – features, topography, functions. <i>The cardiovascular system as object of application of the drug substances.</i>	2	3	4
11.	Lymphoid system – components, structure, functional role. ASSESSMENT		3	4
12.	<i>Central and peripheral nervous system – components. Functional anatomy of the spinal cord and brain.</i> Central nervous system – spinal cord (features, parts) and brain (components). Cranial and spinal meninges, ventricular system and cerebrospinal fluid, its production and circulation. Applied relevance of the subarachnoid space.	2	3	4
13.	<i>Cranial nerves, sensory and motor systems (analyzers) – general principles of organization and classification. General sensibility, skin and its functions, applied relevance from pharmaceutical point of view.</i> Spinal nerves – their formation. Somatic plexuses and their main branches. Autonomic nervous system. Autonomic plexuses. Sympathetic trunk – components, topography, branches.	2	3	4
14.	<i>Functional anatomy of the autonomic (vegetative) nervous system. The autonomic nervous system and drug substances.</i>	3		
15.	Cranial nerves – their real and apparent origins, types of fibers, areas of distribution. Sensory systems – classification. Peculiarities of the sense organs (visual, auditory, vestibular, olfactory, gustatory). ASSESSMENT		3	4
Total		15	45	60
TOTAL		120		



CD 8.5.1 DISCIPLINE CURRICULUM FOR UNIVERSITY STUDIES

Edition: 09
Date: 08.09.2021
Page. 7/15

VI. REFERENCE OBJECTIVES AND CONTENT UNITS

Objectives	Content units
Chapter 1. LOCOMOTOR APPARATUS	
<ul style="list-style-type: none">• to define the basic concepts of anatomy.• to know:<ul style="list-style-type: none">✓ anatomy research methods;✓ anatomical terminology;✓ classification, structure and anatomic features of the bones, joints and muscles;✓ the axes around which movements are performed and the movements produced in the joints in muscular contraction;✓ muscular labor and muscular levers;✓ fasciae and intermuscular spaces of the human body and their applied significance;✓ bony, articular and muscular landmarks.• to demonstrate:<ul style="list-style-type: none">✓ abilities for analysis and systematization of knowledge;✓ bony, articular and muscular landmarks on cadaveric material, radiograms and on a living person;• to apply the criteria for differentiation of the anatomical structures on the cadaver and parts of the body, radiograms and on a living person by:<ul style="list-style-type: none">✓ identification of the human body planes, axes and orientation lines;✓ identification of individual and regional specific features of the bones of the trunk;✓ identification of bony, articular, and muscular landmarks on cadaveric material and on a living person;• to integrate gained knowledge and apply it in practice.	<ol style="list-style-type: none">1. <i>Anatomical terminology.</i>2. <i>Anatomical landmarks of the human body.</i>3. <i>General osteology.</i> Regional characteristics of the skeletal system: bones of the skull, bones of the trunk, bones of the limbs.4. <i>General arthrology.</i> Joints of the trunk, skull and limbs.5. <i>General myology.</i> Muscles of the topographical regions of the body: muscles of the trunk: muscles of the back, muscles of the thorax and muscles of the abdomen; muscles of the girdles, muscles of the free part of the limbs; muscles of the head and neck.
Chapter 2. INTERNAL ORGANS (ALIMENTARY, RESPIRATORY, URINARY AND GENITAL SYSTEMS)	
<ul style="list-style-type: none">• to define:<ul style="list-style-type: none">✓ notions of organ, organ system and apparatus;✓ notions about tubular and parenchymal organs;✓ notion of alimentary (digestive) system;✓ notion of respiratory system;✓ notion of urinary system;✓ notion of genital system.• to know:<ul style="list-style-type: none">✓ anatomical terminology and principles of classification, structure and topography of internal organs;✓ individual and regional features of the organs of the alimentary (digestive) system;✓ individual and regional features of the organs of the respiratory system,✓ individual and regional features of the organs of the urinary system;✓ individual and regional features of the genital (reproductive) organs.	<ol style="list-style-type: none">1. Generalities regarding the structure, classification and topography of the internal organs.2. <i>Alimentary (digestive) system:</i> oral cavity, tongue, teeth and salivary glands; pharynx, oesophagus, stomach; small intestine and large intestine; liver and pancreas. Regions of the abdomen, abdominal and peritoneal cavities. Peritoneum and extraperitoneal spaces.3. <i>Respiratory system:</i> upper and lower airways: nose, larynx, trachea, main bronchi.



CD 8.5.1 DISCIPLINE CURRICULUM FOR UNIVERSITY STUDIES

Edition: 09

Date: 08.09.2021

Page. 8/15

Objectives

Content units

- **to demonstrate:**
 - ✓ anatomical formations on cadavers, molds, radiograms and on a living person;
 - ✓ abilities to identify the topographical landmarks necessary to determine the boundaries and projection of the internal organs.
- **to apply** the criteria for differentiating the anatomical structures on anatomical samples, cadavers, radiograms and on a living person.
- **to integrate** anatomical knowledge with clinical disciplines by:
 - ✓ drawing conclusions on the studied subject;
 - ✓ developing of own opinions about the individual, age and gender anatomical features of the studied organs.

Thyroid and parathyroid glands, thymus. Respiratory organs: lungs and pleura. Mediastinum.
4. *Urinary organs:* kidneys, ureters, urinary bladder. Suprarenal glands and paraganglia.
5. *Male reproductive organs* and male urethra.
6. *Female reproductive organs* and female urethra.
7. *Perineum.*

Chapter 3. CARDIOVASCULAR AND LYMPHOID SYSTEMS

- **to define:**
 - ✓ cardiovascular system;
 - ✓ systemic and pulmonary circulations;
 - ✓ notions of arterial anastomoses;
 - ✓ notions of cavo-caval and portacaval anastomoses.
- **to know:**
 - ✓ anatomical terminology and principles of classification of the blood vessels;
 - ✓ peculiarities of blood supply of the internal organs, joints and skeletal muscles.
- **to demonstrate:**
 - ✓ anatomical structures on cadavers, molds and on a living person;
 - ✓ abilities to identify the topographical landmarks necessary to determine the projection of blood vessels.
- **to apply** the criteria for differentiating the anatomical structures on anatomical samples, cadavers, radiographs.
- **to integrate** anatomical knowledge with clinical disciplines by:
 - ✓ drawing conclusions on the studied subject;
 - ✓ developing of own opinions about studied subject.

1. Heart and pericardium.
2. Regional lymph nodes.
3. Blood vessels and lymphatics of the head and neck.
4. Vasculature and lymph drainage of the abdominal cavity walls and organs.
5. Blood vessels and lymphatics of the upper limb.
6. Vasculature and lymph drainage of the joints and muscles of the lower limb.

Chapter 4. CENTRAL NERVOUS SYSTEM. SPINAL NERVES

- **to define:**
 - ✓ concepts related to the central nervous system (CNS);
 - ✓ derivatives of primary and secondary cerebral vesicles;
 - ✓ notions of variants and anomalies of CNS;
 - ✓ notions of spinal nerve and somatic plexus.
- **to know:**
 - ✓ anatomical terminology and principles of classification, structure and topography of CNS components;
 - ✓ individual and regional peculiarities of CNS;
 - ✓ anatomical terminology and classification of spinal nerves;
 - ✓ specific features of formation of the somatic plexuses.
- **to demonstrate:**
 - ✓ anatomical structures of central and peripheral nervous system on

1. Spinal cord and spinal meninges.
2. Brainstem, components. Fourth ventricle.
3. Diencephalon. Third ventricle.
4. Cerebral hemispheres.
5. Localization of functions in the cerebral cortex. Limbic system.
6. White substance of the cerebral hemispheres. Basal nuclei. Lateral ventricles.



CD 8.5.1 DISCIPLINE CURRICULUM FOR UNIVERSITY STUDIES

Edition:	09
Date:	08.09.2021
Page. 9/15	

Objectives	Content units
<p>anatomical samples, molds, radiograms;</p> <ul style="list-style-type: none"> ✓ ability to identify the topographic landmarks necessary to determine the boundaries and projection of the nerves. • to apply the criteria for distinguishing anatomical structures on the anatomical samples, on the body, on radiograms with transfer of knowledge to a living person: • to integrate anatomical knowledge with clinical disciplines by: ✓ concluding on the studied subject; ✓ developing own opinions on the individual, age and gender specific features of components of the central and peripheral nervous system. 	<ol style="list-style-type: none"> 7. Cranial meninges and cerebrospinal fluid. 8. Conductive pathways of the central nervous system. 9. Spinal nerves, their branches. 10. Cervical plexus. 11. Brachial plexus. 12. Thoracic spinal nerves. 13. Lumbar plexus. 14. Sacral plexus.
<p>Chapter 5. CRANIAL NERVES AND SENSE ORGANS</p>	
<ul style="list-style-type: none"> • to define: ✓ cranial nerves; ✓ notion of sensory system; ✓ notion of conducting pathway. • to know: ✓ anatomical terminology and principles of classification, features and topography of the cranial nerves; • to demonstrate: ✓ anatomical structures on cadavers, molds, etc. • to apply criteria for differentiation of the anatomical structures on anatomical samples, cadavers. • to integrate anatomical knowledge with clinical disciplines by: ✓ concluding on the studied subject; • developing own opinions on the individual features of distribution of the cranial nerves. 	<ol style="list-style-type: none"> 1. <i>Cranial nerves</i> – their real and apparent origins, types of fibers, areas of innervations. 2. Sensory system. 3. Conductive pathways.
<p>Chapter 6. AUTONOMIC NERVOUS SYSTEM.</p>	
<ul style="list-style-type: none"> • to define: ✓ autonomic nervous system and its components; • to know: ✓ anatomical terminology and principles of classification, structure and topography of the components of the autonomic nervous system. • to demonstrate: ✓ anatomical formations on cadavers, molds, radiographs with the transfer of knowledge on a living person; ✓ components of the autonomic nervous system. • to apply criteria for differentiating anatomical formations on anatomical samples, cadavers. • to integrate anatomical knowledge with clinical disciplines by: ✓ concluding on the studied subject; ✓ developing own opinions on the individual, age and gender anatomic specific features of the autonomic nervous system. 	<p><i>Autonomic nervous system – components.</i></p> <ol style="list-style-type: none"> 1. Sympathetic trunk. 2. Autonomic plexuses, components, main branches.



CD 8.5.1 DISCIPLINE CURRICULUM FOR UNIVERSITY STUDIES

Edition:	09
Date:	08.09.2021
Page. 10/15	

VII. PROFESSIONAL (SPECIFIC (SC) AND TRANSVERSAL (TC)) COMPETENCES AND STUDY OUTCOMES

✓ PROFESSIONAL COMPETENCES (specific) (SC)

- CP1. Knowledge, understanding and use of anatomical language;
- CP2. Knowledge of the features of the structure, development and functioning of the human body;
- CP3. Knowledge of the organization of the locomotor apparatus, of the systems of organs, vascular and nervous systems;
- CP4. Identification of anatomical structures, anatomical variants and anomalies on cadavers and on a living person;
- CP5. Knowledge and identification of anatomical landmarks on preparations, molds and on a living person;
- CP6. Knowledge of projection of anatomical formations on a living person and the ability to describe and determine the limits of the internal organs in relation to bony, muscular and other landmarks;
- CP7. Description of radiograms, tomograms, MRI, sonographic results, etc.;
- CP8. Knowledge of anatomical dissection techniques;
- CP9. Practical application of anatomical knowledge;
- CP10. Solving of case based problems and formulating the conclusions;
- CP11. Performing of various practical exercises and procedures for carrying out specific professional activities based on anatomical knowledge and other fundamental disciplines.

✓ TRANSVERSAL COMPETENCES(TC)

- CT1. Developing autonomic decisional capacity;
- CT2. Formation of personal attitude;
- CT3. Ability of social interaction and group activity;
- CT4. Fitting in interdisciplinary projects, extracurricular activities;
- CT5. Performing activities and exercising the specific role for studying the discipline in a team. Promoting the spirit of initiative, dialogue, cooperation, positive attitude and respect for colleagues, empathy, altruism and continuous improvement of one`s activities;
- CT6. Developing different learning techniques;
- CT7. Selection of digital materials, critical analysis and conclusions;
- CT8. Presentation of individual scientific projects;
- CT9. Responsible execution of professional tasks with the application of the values and norms of professional ethics, as well as the provisions of the legislation in force. Promoting logical reason, practical application, assessment and self-assessment in decision-making;
- CT10. Objective self-evaluation of continuing vocational training skills to develop personal and professional skills.

✓ STUDY OUTCOMES

At the end of studying of the content unit the student will be capable:

- to have knowledge about structure, topography and anatomical features of the organs and organ systems;
- to understand the principles of application and transfer of knowledge in medical practice;
- to apply on a living person the theoretical knowledge regarding determination of limits and projection of the organs to anatomical landmarks;
- to be able to describe the radiographies, MRI, endoscopic, sonographic images, etc;
- to be able to deduce possible causes and understand the mechanisms that influence the physiological processes, which can contribute to the appearance of anatomical variants and development anomalies;
- to evaluate the place and role of human anatomy in the preclinical training of a medical student;
- to be able to implement the gained knowledge in the research activity;
- to possess skills of analysis and synthesis of information, and to be able to use the acquired knowledge and Information Technologies.



CD 8.5.1 DISCIPLINE CURRICULUM FOR UNIVERSITY STUDIES

Edition:	09
Date:	08.09.2021
Page. 11/15	

VIII. STUDENT'S SELF-TRAINING

Suggestions for individual activity

The passive listening of the course is one of the less efficient methods of learning, even when it is well structured and illustrated. That is why in order to memorize the material many teaching methods related to the delivered material are required.

The practical work is more efficient than reading of how to do it.

Students who desire to succeed in the course of Human Anatomy need to work insistently and actively with the demonstrative material.

Considering the learning methodology the department would suggest the students some tips to be followed:

1. First of all, it is necessary to make acquaintance with the subjects which should be answered using the notes from your workbook.

2. Read attentively the text from the textbook, make notes. Try to formulate yourselves the main ideas. Study the schemes and images from the textbook and workbook. Use the acquired knowledge to demonstrate on anatomical samples. Answer the questions from your workbooks for practical work.

3. Come to lectures not only for the sake of being present! If you do so, you will not be able to meet all the requirements. At lectures take notes attentively asking yourselves if you understand the explained material, rating your level of knowledge.

4. Mind the following: teachers are more than happy when you ask questions. This means that you try to understand and process the studied material.

5. For a more progressive comprehension of the lecture you are advised to organize yourselves into 2-3 students for regular meetings in order to discuss the theme which was studied at the lesson preparing yourselves for the tests and exams. As a rule, the material is memorized easier in groups, than when you work on your own.

6. The course of Human Anatomy expects a lot from you. It comprises around 5000 terms, the majority of them are new and need to be memorized. These requirements involve a rational time usage, so, it will be necessary to handle time so as to find the balance between the effort given for an appropriate knowledge feedback and your private life.

Depth of the subject knowledge requires each working hour of direct contact with the teacher to be supplemented with at least 1-2 hours of individual student's work.

For a successful comprehension of the course in Human Anatomy, you need to work individually around 8-10 hours per week.

For that purpose, you should use the *Anatomical Study Hall* of the Department of Human Anatomy.



CD 8.5.1 DISCIPLINE CURRICULUM FOR UNIVERSITY STUDIES

Edition: 09

Date: 08.09.2021

Page. 12/15

No.	Expected product	Implementation strategies	Assessment criteria	Implementation terms
1.	Work with textbook and information resources	Systematic work in the library and with audiovisual production. Examination of the electronic sources related to the discussing subject.	1. Logical thinking, flexibility. 2. Quality of systematization of the gained knowledge through the self-training.	During the semester
2.	Report	Analysis of relevant sources related to the theme of the report. Analysis, systematization and synthesis of information on the theme. Making the report in conformity with effectual requirements and present it at the department.	1. Quality of systematization and analysis of the gained knowledge through the self-training. 2. Concordance of information with proposed theme.	During the semester
3.	Work with anatomical samples and cadaveric material in the <i>Anatomical Study Hall</i> (over program).	The student will benefit from the self-training program in the <i>Anatomical Study Hall</i> after hours. If required, he can contact the professor on duty. Interaction conditions are created with both group colleagues and other students from all faculties. The student is able to work with anatomical preparations himself or in a team.	1. Workload. 2. Ability to demonstrate anatomical formations on samples. 3. Formulating conclusions on applied significance of the anatomical formations.	During the semester



CD 8.5.1 DISCIPLINE CURRICULUM FOR UNIVERSITY STUDIES

Edition:	09
Date:	08.09.2021
Page. 13/15	

IX. METHODOLOGICAL SUGGESTIONS FOR TEACHING-LEARNING-ASSESSMENT

- **Teaching and learning methods used**

1. The Human Anatomy discipline is delivered according to the classical methodology; with lectures and practical classes.
2. The theoretical course is delivered in the lectures held by the course holders. An interactive lecture is practiced.
3. Also, the following methods are used:
 - ✓ explanation;
 - ✓ brainstorming;
 - ✓ heuristic conversation and debate;
 - ✓ group work;
 - ✓ individual work;
 - ✓ working with manual, scientific text and the anatomy atlas;
 - ✓ solving the case based problems;
 - ✓ interactive listening.

- **Applied teaching strategies / technologies (specific to the discipline)**

In practical work, together with the teacher of the group, students study on the anatomical samples, use planes, molds, tables, fill in the workbooks, do preparation of anatomical samples that would be further demonstrated to the colleagues.

- **Methods of assessment (including the method of final mark calculation)**

Current: frontal/individual assessment of knowledge by:

- ✓ written assessments;
- ✓ demonstration of anatomical structures included in the curriculum of the discipline on the anatomical samples;
- ✓ solving the docimological tests in University Informational Management System (UIMS) – SIMU;
- ✓ graphical representation of the schemes on certain subjects;
- ✓ completion of practical workbooks for individual work;
- ✓ solving the case based problems.

Three assessments, including assessment of the practical skills are organized at Human anatomy discipline, during the semester of study, as follows:

Assessment no. 1 – Locomotor apparatus (oral evaluation / practical skills + testing + self-training).

Assessment no. 2 – Internal organs (viscera). Cardiovascular system (oral evaluation / practical skills + testing + self-training).

Assessment no. 3 – Lymphoid system. Central and peripheral (cranial and spinal nerves) nervous system. Autonomic nervous system (oral evaluation / practical skills + testing + self-training).

Assessment of practical skills.

Final: assessment - exam.

Examination of Human anatomy discipline consists of testing in the UIMS – SIMU.

The overall score is based on two components: **the half-yearly average score** with the coefficient 0.5 and the **SIMU test** with the coefficient of 0.5.

Assessment of knowledge is graded from 10 to 1.0 (with decimals).



CD 8.5.1 DISCIPLINE CURRICULUM FOR UNIVERSITY STUDIES

Edition: 09

Date: 08.09.2021

Page. 14/15

Scale of assessment using rounded marks values

Intermediate marks scale (annual average, marks from the examination stages)	National Assessment System	ECTS Equivalent
1,00-3,00	2	F
3,01-4,99	4	FX
5,00	5	E
5,01-5,50	5,5	
5,51-6,0	6	
6,01-6,50	6,5	D
6,51-7,00	7	
7,01-7,50	7,5	C
7,51-8,00	8	
8,01-8,50	8,5	B
8,51-8,00	9	
9,01-9,50	9,5	A
9,51-10,0	10	

The average annual mark and the marks of all stages of final examination (computer test, oral) - are expressed in numbers according to the mark scale (according to the table), and the final mark obtained is expressed in number with two decimals, which is transferred to student's record-book.

Absence on examination without a reason is recorded as "absent" and is equivalent to 0 (zero). The student has the right to have two re-examinations.



CD 8.5.1 DISCIPLINE CURRICULUM FOR UNIVERSITY STUDIES

Edition:	09
Date:	08.09.2021
Page. 15/15	

IX. RECOMMENDED LITERATURE:

A. Compulsory:

1. CATERENIUC I., LUPAȘCU T. et al. Anatomia omului (*culegere de cursuri pentru Facultatea Farmacie*). Chișinău: Tipografia Sirius SRL, 2015.
2. ȘTEFANEȚ M. *Anatomia omului*. Vol. I, ed. 2 (revăzută și completată). Chișinău: CEP „Medicina”, 2014, 2018.
3. ȘTEFANEȚ M. *Anatomia omului*. Vol. II, ed. 2 (revăzută și completată). Chișinău: CEP „Medicina”, 2013, 2018.
4. HACINA T. *Ghide in anatomy. Locomotor apparatus and viscera*. Chisinau: Tipografia “Print Caro”, 2019.
5. GLOBA L. *Human Anatomy. Neurology with Sense Organs and Angiology*. 2nd edition, Chisinau, Tipografia “Print Caro”, 2018
6. САПИН М. Р., БИЛИЧ Г. Л. *Анатомия человека*. Том. I и II. М., 2001.
7. CATERENIUC I.; LUPAȘCU T.; TAȘNIC M. et al. *Culegere de scheme la anatomia omului / Сборник схем по анатомии человека / Collection of schemes for human anatomy*. Ed. III-VI. Chișinău: Tipografia Sirius SRL, 2011, 2014, 2019.
8. СИНЕЛЬНИКОВ Р. Д., СИНЕЛЬНИКОВ Я. Р. *Атлас анатомии человека*. Том I-IV (oricare ed.).

B. Suplimentară:

1. ШВЫРЕВ А. А. *Анатомия и физиология человека с основами общей патологии*. Ростов-на-Дону, «Феникс», 2012.
2. PAPILIAN V. *Anatomia omului*. Vol. I, Aparatul locomotor; Vol. II, Viscere. București, 1998
3. КОТОВ А. В., ЛОСЕВА Т. Н. (под ред.) *Физиология и основы анатомии*. Москва: Медицина, 2011.
4. IFRIM M., ANDRIEȘ V., BATÎR D., HACINA T. *Anatomia omului*. Chișinău, 2007.
5. NETTER FRANK H. *Atlas de anatomie a omului* (ed.: Gh. P. Cuculici, A. W. Gheorghiu; cons. st.: A.T. Ispas). Ed. a 5-a rev. Bucuresti, 2012.
6. NETTER FRANK H. *Atlas of Human Anatomy*. 4th Edition, 2006.