

**DESCRIPTION OF COURSE UNIT FOR DOCTORAL STUDIES  
AT VILNIUS UNIVERSITY**

<b>Scientific Area/eas, Field/ds of Science</b>	Medical and Health Sciences (M 000): Pharmacy (M 003); Public Health (M 004); Nursing (M 005) Nature Sciences: (N 000): Biochemistry (N 004); Biology (N 010); Biophysics (N 011)			
<b>Faculty, Institute, Department/Clinic</b>	Faculty of Medicine Institute of Biomedical Sciences Department of Anatomy, Histology and Anthropology			
<b>Course unit title</b> (ECTS credits, hours)	<b>Human Anatomy and Histology (for non-medical students)</b> 10 kredits (265 hours)			
<b>Study method</b>	<b>Lectures</b>	<b>Seminars</b>	<b>Consultations</b>	<b>Self-study</b>
Number of ECTS credits	-	-	1	9
<b>Method of the assessment</b> (in 10 point system)	Presentation and evaluation of the report: * the report is presented on a target topic agreed with the coordinating lecturer, based on the latest scientific publications; Criteria for evaluating the report (minimum readable score - 5): (a) relevance, relevance and novelty of the material submitted (2 points); (b) general structure and scope of the report, clear presentation of the knowledge, reasoning, brevity and specificity (2 points); (c) Summary, presentation and justification of conclusions (1 point); d) raising problematic issues, presenting the application of knowledge in one's dissertation (3 points); e) ability to participate in discussion, question management, oratory skills (2 points).			
<b>PURPOSE OF THE COURSE UNIT</b>				
The aim of the subject is to provide the necessary theoretical and practical knowledge and skills of human macroscopic and microscopic anatomy, which could be applied in other fields of science, to those who have not studied according to medical study programs.				
<b>THE MAIN TOPICS OF COURSE UNIT</b>				
Anatomical nomenclature. Imaging of the human body. Research methods. Cells and their elements. Fabric types and their origin. Epithelial, connective, muscular, nervous tissues. Review of human embryogenesis. Osteology: skeletal tissues, their evolution. Axial skeleton, upper and lower limb skeleton. Skull: cerebral and facial bones, topography of the skull. Gender and age differences in bone. Arthrology: classification of joints, fibrous and cartilage joints, structure of joints, classification, biomechanics. Joints of the torso, skull and limbs. Myology: muscle classification, species, biomechanics. Muscles, fascia and topography of the head, neck, back, chest, abdomen, limbs. Body surface anatomy. Splanchnology: Characterization hollow and parenchymal organs. Development of hollow and serous covers. Digestive system. Oral cavity walls structure. Tooth structure, types, generations, chronology of germination and change. Tongue structure, muscles, mucous membrane properties. Salivary glands. Pharyngeal structure, parts, lymphoepithelial ring. Oesophageal structure, parts. Stomach structure, parts. Characterization of the duodenum, jejunum and ileum, morphofunctional differences. The large intestine.				

Morphofunctional differences between the small and large intestines. Large digestive glands: liver, pancreas. Gallbladder and ducts. Peritoneum, its derivatives. Respiratory system. Breath trails. Nasal cavity and its accessories. Nasopharynx. Throat structure, parts, voice device. Trachea, bronchi, bronchial tree. Lung structure. Pleura. Respiratory mechanism. Skin and its derivatives. Blood. Regularities of arterial branching and venous formation, microcirculatory circuit. Heart: chambers, valves, conductive system. Cardiovascular system. The large and small circle of the blood circulation. Aorta, its parts and branches. The anterior venous system. Inferior vena cava system The portal vein. Blood vessels in individual areas of the body. Vascularization of muscles and internal organs. Fetal blood flow. Lymphatic system. Central and peripheral lymphatic organs. Lymphatic vessels. Formation of major lymphoid trunks. Lymph drainage and regional lymph nodes in individual areas of the body. Urogenital system. Urinary organs. Kidneys. Urinary tract: ureters, bladder, male and female urethra. Internal organs of the male genitalia: testicle, testicular appendix, seminal vesicles, urethra. External genitalia: penis, scrotum. Internal female genitalia: ovary, fallopian tube, uterus, vagina. External female genitalia: labia majora and minora, clitoris, vaginal canal. Menstrual cycle. Menarchy, female reproductive period, menopause. Breasts. Phylogeny and ontogenesis of the nervous system. Central nervous system: spinal cord, brainstem (cerebellum, bridge and midbrain). Major ascending and descending CNS wires. Meninges. Circulation of cerebrospinal fluid. Sensory organs. Structure of the eye: eyeball, accessory organs. Ear structure: outer, middle inner ear. Smell and taste organs. Peripheral nervous system. Cranial nerves. Dorsal nerves and their branches, plexuses. Autonomic nervous system (sympathetic and parasympathetic). Nerves in individual areas of the body. Innervation of muscles and internal organs. Endocrine system: neurohumoral regulation of body functions, hormones, classification of endocrine glands. Hypothalamus - pituitary system, thyroid gland, parathyroid glands, pineal gland, adrenal glands, pancreas, gonads.

### **RECOMMENDED LITERATURE SOURCES**

1. Vitkus A., Baltrušaitis K., Valančiūtė A., Vitkus A., Žukienė J. Žmogaus histologija. Kaunas: KMU leidykla. 2004.
2. A, L. Mescher. Jungqueras Basic Histology. Text and Atlas. 2018.
3. L. P. Gartner. Textbook of Histology. 2017.
4. Žalgevičienė V., Laurinavičienė A. Bendrosios histologijos pradmenys. II papildytas ir atnaujintas leidimas. Vilnius: Vaistų žinios, 2011.
5. Gray's Anatomy: The Anatomical Basis of Clinical Practice. 40th ed. Churchill-Livingstone, Elsevier, 2008-2010.
6. Česnys G., Tutkuvienė J., Barkus A., Gedrimas V.L., Jankauskas R., Rizgelienė R., Žukienė J. Žmogaus anatomija. I tomas. Vilnius: Vilniaus un-to I-kla, 2008.
7. Stropus R., Vaičekauskas V., Tutkuvienė J. ir kt. Žmogaus anatomija. II tomas. Kaunas: KMU I-kla, 2008.
8. Ross, M. H., & Pawlina, W. (2006). Histology: A text and atlas: with correlated cell and molecular biology. 2016.
9. Netter F.H. Atlas of Human Anatomy. 5th ed. Saunders, 2010.
10. R. Šimkūnaitė- Rizgelienė, V. Žalgevičienė, R. Karneckė. Histologijos pratybų metodiniai nurodymai II specialioji histologija. Vilnius: Vilniaus universiteto leidykla, 2021.

11. Žalgevičienė, Violeta; Šimkūnaitė-Rizgeliene, Renata; Karneckė, Rūta. Histologijos pratybų metodiniai nurodymai: bendroji citologija, bendroji embriologija ir bendroji citologija. Vilnius: Vilniaus universiteto leidykla, 2019.

**CONSULTING LECTURERS**

1. Coordinating lecturer: Violeta Žalgevičienė (Prof. Dr.).

2. Ramunė Čepulienė (Assoc. Prof. Dr.).

3. Laura Nedzinskienė (Assoc. Prof. Dr.).

4. Žydrūnė Miliauskienė (Assoc. Prof. Dr.).

**APPROVED:**

By Council of Doctoral School of Medicine and Health Sciences at Vilnius University:  
29<sup>th</sup> of September 2022

Chairperson of the Board: Prof. Janina Tutkuvienė