

Higher education institution: <i>Slovak Medical University in Bratislava</i>	
Faculty: <i>Faculty of Medicine</i>	
Course code: <i>GM 056A</i>	Course title: <i>Histology 1</i>
Type, extent and method of educational activity: <i>Extent of teaching in hours (semester / week):70</i> <i>Lecture: 28/2 per week</i> <i>Practical excercises: 42/3h per week</i> <i>(Total work load if the student is 150 h)</i> <i>Method of the educational activity: full-time study (distance study)¹</i> <i>Form of the study: full-time</i>	
Number of credits: 6	
Recommended semester/trimester study: <i>2nd</i>	
Level of higher education study: <i>1. + 2. Level</i>	
Prerequisite courses:	
Requirements for completion of the course: <i>The criterion for successful completion of the course (PH) is successful completion of partial tests with an overall minimum success rate of 70% (or possible successful completion of the corrective test, at least 70%) and 100% participation at practical training (1 justified absence is tolerated). If the conditions are not met, the student will be able to prove his or her knowledge in the form of an oral commission examination within the date set by the head of the department during the examination period.</i> <i>The evaluation of the student's performance within the course is carried out mainly by continuous control of study results during the teaching process (control questions, written tests, assignments), records of participation in compulsory forms of teaching.</i> <i>The student's workload in indirect teaching is 80 hours. (includes preparation for practical exercises, drawing of slides, preparation for written partial tests, preparation of seminar work).</i>	
Learning outcomes: <i>The course brings students an introduction and overview of the history of histology as an independent medical morphological science, offers basic knowledge of cytology, the most commonly used histological techniques and a description of all basic tissues of the human body, with a detailed microscopic analysis of their components with emphasis on functional histology. After completion of the course, the student is able to work independently with a microscope and histological specimens, can diagnose any human tissue, knows its cellular composition as well as extracellular space.</i>	
Brief content of the course (syllabus): <i>Overview of methods used in histology. Light and electron microscopy. Preparation of histological sections for light microscopy. Common stains used for light microscopy. Histochemistry and immunohistochemistry. The functional structure of the different components of the cell. Cell cycle. Epithelial tissue (characteristics, classifications, types and the common sites of each type). The structure of the cell junctions and the basement membrane. Connective tissue proper. Fixed and free cells of connective tissue proper. Extracellular matrix: fibers and ground substance. The types of connective tissues. Functional morphology and clinical significance of blood elements (red blood cells, white blood cells, platelets). Bone marrow and hemopoiesis. Cartilage and Bone. Intramembranous and endochondral ossification. Growth of bone. Repair of bone after fracture. Microscopic structure of synovial joints. Muscle tissue. Functional histology of skeletal, smooth and cardiac muscles. Ultrastructure of skeletal muscle fibers. Impulse conductive system of the heart. Nervous tissue. Neurons and neuroglia. Funtional ultrastructure of neurons and supporting glial cells. Synapses. Microscopic structure of the gray and white mater.</i>	
Recommended literature: <i>Mescher AL. Junqueira's Basic Histology. Text and Atlas. 16th Edition. New York: McGraw-Hill Education, 2021, 576 pp.</i> <i>Pawlina W. Histology. A Text and Atlas with Correlated Cell and Molecular Biology. 8th Edition. Philadelphia: Wolter Kluwer Health, 2018, 928 pp.</i> <i>Koenen A, Zolffel M. Microscopy for dummies. Special edition Zeiss. Weinheim: Wiley, 2020, 99 pp.</i> <i>Kierszenbaum AL, Tres LL. Histology and Cell Biology. An Introduction to Pathology. 5th Edition. Philadelphia: Elsevier Saunders, 2019, 824 pp.</i>	

¹§ 108e ods. 2 zákona č.131/2002 Z.z. o vysokých školách

Adamkov M. (Ed). *Introduction to Functional Histology. Textbook. Fourth Revised and Updated Edition.* Nakladateľstvo P + M, 2017, 439 s.

Gartner LP, Hiatt JL. *Color Atlas and Text of Histology. 7th Edition.* Philadelphia: Wolters Kluwer Lippincott Williams and Wilkins 2017, 544 pp.

Eroschenko VP. *diFiore's Atlas of Histology with Functional Correlations. 13th Edition.* Philadelphia: Lippincott Williams and Wilkins 2017, 617 pp.

Federative Committee on Anatomical Terminology. *Terminologia Histologica: International Terms for Human Cytology and Histology.* Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins 2008, 213 pp.

Language requirements:-

Notes:

The course runs in Slovak and English language.

Course assessment: PH

A	B	C	D	E	FX
0 %	0 %	0 %	0 %	0 %	0 %

Lecturers:

MUDr. Mgr. Michal Miko, PhD.

MUDr. Renáta Mikušová, PhD.

Date of last modification: 16. 11. 2021

Approved by: *person responsible for realization, development and ensuring of the study program quality*
prof. MUDr. Iveta Šímková, CSc.

Course Information Sheet

Higher education institution: <i>Slovak Medical University in Bratislava</i>	
Faculty: <i>Faculty of Medicine</i>	
Course code: <i>GM 056B</i>	Course title: <i>Histology 2</i>
Type, extent and method of educational activity: <i>Extent of teaching in hours (semester / week):70</i> <i>Lecture: 28/2 h per week</i> <i>Practical trainings: 42/3h per week</i> <i>(Total work load of the student is 175 h)</i> <i>Method of the education activity: full-time study/distance study</i> <i>Form of the study: full-time</i>	
Number of credits: <i>7</i>	
Recommended semester/trimester study: <i>3rd</i>	
Level of higher education study: <i>1. + 2. level</i>	
Prerequisite courses: <i>Histology 1</i>	
Requirements for completion of the course: <i>The critereion for successful completion of the course (exam) is successful completion of partial tests with an overall minimum success rate of 70% (or possible successful completion of the corrective test, at least 70%), 100% participation in practical training (1 justified non-participation is tolerated) and passing the exam (practical exam, oral interview). Minimum pass: 60%. Evaluation: A: 95 % - 100 %, B: 88 % - 94 % C: 77 % - 87 %, D: 66 % - 76 %, E: 60 % - 65 %, FX: 59 % and less.</i> <i>The evaluation of the student's performance within the course is carried out mainly by continuous control of study results during the teaching process (control questions, written tests, assignments), records of participation in compulsory forms of teaching and by level of proven knowledge in the oral exam.</i> <i>The student's workload in indirect teaching is 105 hours (includes preparation for practical exercises, drawing of slides, preparation for written partial tests, preparation for final examination).</i>	
Learning outcomes: <i>Following the course Histology 1, the course offers a detailed analysis of the physiological microscopic anatomy (special histology) of all human organ systems with functional and clinical correlations. Functional histology of organs provides the basis for the study of physiology, pathophysiology and pathological anatomy. After graduation, the student is able to independently diagnose any human organ, knows its functional histology.</i>	
Brief content of the course (syllabus): <i>Microscopic structure of the heart and blood vessels. Types of capillaries. Functional histology of lymphatic organs. Microscopic structure of endocrine glands, hypothalamic - pituitary system. Microscopic structure of the oral cavity and tongue, taste buds. General microscopic structure of the digestive tract wall. Functional histology of the liver, pancreas and salivary glands. Hepatocyte ultrastructure. Dissé space and sinusoidal liver. Construction of exocrine and endocrine part of the pancreas. Microscopic structure of the respiratory system. Olfactory mucosa. Mucociliary clearance, alveolar macrophages, surfactant, blood-air barrier. Functional histology of the kidney and urinary tract. Kidney filtration barrier, juxtaglomerular apparatus. Functional histology of the male reproductive system. Testicles and spermatogenesis. Glands associated with the reproductive system. Penis and morphological basis of erection. Functional histology of the female reproductive system. Ovarian and menstrual cycle. Yellow body structure. Functional histology of selected organs in pregnancy. Functional histology of the brain, spinal cord and peripheral nervous system. Microscopic structure of sensory organs. Microscopic structure of skin and its derivatives.</i>	
Recommended literature: <i>Mescher AL. Junqueira's Basic Histology. Text and Atlas. 16th Edition. New York: McGraw-Hill Education, 2021, 576 pp.</i> <i>Pawlina W. Histology. A Text and Atlas with Correlated Cell and Molecular Biology. 8th Edition. Philadelphia: Wolter Kluwer Health, 2018, 928 pp.</i>	

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Federative Committee on Anatomical Terminology. Terminologia Histologica: International Terms for Human Cytology and Histology. Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins 2008, 213 pp.

Language requirements: English

Notes:

The course runs in Slovak and English language.

Course assessment

Total students assessed in subject: 74

A	B	C	D	E	FX
23 %	19 %	11 %	20 %	22 %	6 %

Lecturers:

MUDr. Mgr. Michal Miko, PhD.

MUDr. Renáta Mikušová, PhD.

Date of last modification: 16. 11. 2021

Approved by: person responsible for realization, development and ensuring of the study program quality
prof. MUDr. Iveta Šimková, CSc.