Histology, cytology and embryology

1. IMPRINT

Academic Year	2025/2026
Department	Faculty of Dental Medicine
Field of study	English Dentistry Division
Main scientific discipline	Medical sciences
Study Profile	General academic
Level of studies	Uniform MSc
Form of studies	Full-time program
Type of module / course	Obligatory
Form of verification of learning outcomes	Exam
Educational Unit / Educational Units	Department of Histology and Embryology Center for Biostructure Research 02-004 Warszawa, Chałubińskiego 5 Str. (Anatomicum bldg.) Web site: http://histologia.wum.edu.pl The Department office is open for students on working days. Business hours 9:30 - 14:00, phone/fax 22 629-5282. Department of Medical Genetics, Center for Biostructure Research, Wydział Lekarski 3c Pawińskiego Street, 02-106 Warszawa phone. 22 572 06 95, fax 22 572 06 96 http://www.genetyka.wum.edu.pl
Head of Educational Unit / Heads of Educational Units	Paweł Włodarski M.D., D.D.S.,Ph.D Professor; pawel.wlodarski@wum.edu.pl Rafał Płoski, Ph.D., Professor; rafal.ploski@wum.edu.pl

Course coordinator	Paweł Włodarski M.D., D.D.S.,Ph.D Professor; pawel.wlodarski@wum.edu.pl
Person responsible for syllabus	Ewa Jankowska Steifer, Ph.D., Associate Professor; phone: (48) 22-629-52-82; ewa.jankowska-steifer@wum.edu.pl Anna Walczak Ph.D; phone: (48) 22 572 06 95; anna.walczak@wum.edu.pl
Teachers	Marek Kujawa, M.D., Ph.D.; marek.kujawa@wum.edu.pl Ewa Jankowska-Steifer, Ph.D, Associate Prof.; ewa.jankowska-steifer@wum.edu.pl Paweł Włodarski M.D., D.D.S.,Ph.D Professor; pawel.wlodarski@wum.edu.pl Artur Kamiński, M.D., D.D.S., Ph.D., Associate Prof.; artur.kaminski@wum.edu.pl Anna Walczak Ph.D; anna.walczak@wum.edu.pl

2. BASIC INFORMATION

Year and semester of studies	1 year	**Number of ECTS credits**	8

FORMS OF CLASSES **Contacting hours with academic teacher**	**Number of hours**	**ECTS credits calculation**
Lecture (L)	10	0,4
Seminar (S)	25 + 5 Genetics	1,2
Discussions (D)		
e-learning (e-L)		
Practical classes (PC)	50	2
Work placement (WP)		
Unassisted student's work		
Preparation for classes and completions	110	4,4

3. COURSE OBJECTIVES

O1	Gaining knowledge about structure and function of the cell organelles, tissues and organs, as well as morphological adaptation of tissues to their function.
O2	Gaining knowledge regarding the development of the embryo, development of teeth and the most common fetal abnormalities.
O3	Gaining knowledge regarding identification of histological specimens and characteristic elements of the tissues under the microscope.
O4	Gaining knowledge regarding the histological structure of tissues of the tooth and understanding the physiology of these tissues.

O5	Gaining knowledge regarding the most common genetic disorders and understanding types of heredity.

4. STANDARDS OF LEARNING – DETAILED DESCRIPTION OF EFFECTS OF LEARNING

Code and number of the effect of learning in accordance with standards of learning	Effects in time
Knowledge – Graduate* knows and understands:	
A.W1.	human body structures: cells, tissues, organs, and systems with particular emphasis on the stomatognatic system;
A.W2.	organ and organism development, with special emphasis on the masticatory organ;
A.W3.	structure of the human body in topographical and functional approach, with particular emphasis on the head and neck;
A.W4.	the role of the nervous system in the functioning of individual organs;
A.W5.	functional significance of the individual organs and the systems they form;
B. W6.	role and importance of body fluids, including saliva;
B. W8.	methods of tissue and organ imaging and the principles of operation of diagnostic equipment for this purpose;
B. W15.	selected issues in genetics and molecular biology;
B. W16.	clinical application of genetic principles.
Skills– Graduate* is able to:	
A.U2.	operate the optical microscope and recognise the histological structure of tissues and organs, and describe and interpret the microscopic structure of cells, tissues and organs and their functions;
B.U1.	interpret physical phenomena occurring in the masticatory apparatus;
B.U9.	apply knowledge of genetics and molecular biology to clinical work.

5. ADDITIONAL EFFECTS OF LEARNING

Number of the effect of learning	Effects of learning in time
Knowledge – Graduate knows and understands:	
K1.	issues in the field of medicine and natural sciences – in the basic scope;
Skills– Graduate is able to:	

S8.	communicate within the team and share knowledge;
Social Competencies – Graduate is ready for:	
SC5.	recognise and identify their own limitations, to make a self-assessment of deficits and educational needs;
SC7.	use objective sources of information.

6. CLASSES

Form of class	Class contents	Effects of Learning
Lectures (L)	**L1 – Embryology I.** **Fertilization, implantation, embryo development up to the 4th week.**	A.W2., W2., SC5., SC7.
	L2 – Embryology II. **Body cavities, fetal membranes, placenta development.** Fetal period**,** amniotic membrane, the formation and structure of the placenta.	A.W2., W2., SC5., SC7.
	L3 – Embryology III. **Development of the face, role of neural crest cells in tooth development. Clinical correlations.**	A.W2., W2., SC5., SC7.
	L4 – Mucous membranes of the oral cavity. Histological structure of the oral mucosa, major salivary glands and their ducts, the role of secretory cells and ducts cells in the formation of saliva.	A.W1., A.W2., A.W3., A.W4., A.W5., SC5., SC7.
	L5 – Development of tooth. Histological structure of the tooth and periodontal tissues. Participation of germ layers in the genesis of tooth and periodontal structures. Development of deciduous and permanent teeth. Structure of the enamel-forming organ. Formation of the crown and root of the tooth. Eruption mechanisms.	A.W1., A.W2., A.W3., A.W4., A.W5., SC5., SC7.
	L6 – Enamel. Histological structure of enamel. Structure and dimensions of enamel prisms. Aprismatic enamel.	A.W1., A.W2., A.W3., A.W4., A.W5., SC5., SC7.
	L7 – Dentin and pulp. Histological structure of dentin. Types of dentine. Structure and function of odontoblasts. Mechanisms of post-damage dentine repair. Histological structure of the pulp. Vascularization and innervation of the pulp. Pulp cells. Intercellular matrix of the pulp. The function of the pulp as a nutritional structure. The role of the pulp in the repair mechanisms of the dentine.	A.W1., A.W2., A.W3., A.W4., A.W5., SC5., SC7.
	L8 – Cementum and periodontal ligament. Histological structure and histogenesis of cement. Types of cement. Cement function in repair. Participation of cement in tooth fixation in the alveolus. Histological structure of the periodontal ligament. Periodontal function. Periodontium as an element of the suspensory system of the tooth.	A.W1., A.W2., A.W3., A.W4., A.W5., SC5., SC7.
	L9 – Tooth eruption.	A.W1., A.W2., A.W3., A.W4., A.W5., SC5., SC7.
	L10 – Bone of alveolar process. Temporomandibular joint, dental implants. Anatomical and histological structure of the joint components: mandibular head, articular fovea	A.W1., A.W2., A.W3., A.W4.,

	and tubercle, disc visualized with MRI, photos and videos of arthroscopy of the temporomandibular joint with disc function. Definitions of biomaterials and biocompatibility - metals, ceramics, polymers (including natural) and their use (screws, plates, dental appliances, implants) - implantable materials for tissue reconstruction (bone grafts, mucosa grafts, barrier membranes) and their healing mechanisms - tissue engineering in the reconstruction of alveolar processes (definition, composition, healing mechanisms).	A.W5., SC5., SC7.
Seminar (S) Practical classes (C)	**S1 – Seminar 1** Construction of an optical microscope. Operating procedure of the optical microscope. Preparation of biological material for evaluation in optical microscopy.	A.W1., A.W3., A.W4., A.W5., K1., SC5., SC7.
	S2 – Seminar 2 Electron microscope. Types of electron microscopes. Construction and principle of working with the transmission electron microscopes. Preparation of material for evaluation in an electron microscope. Ultrastructure of selected cytoplasmic organelles.	A.W1., A.W3., A.W5., K1., SC5., SC7.
	S3 – Seminar 3 Ultrastructure of the cell nucleus. Structure of the cell nucleus and nuclear envelope. Nuclear organelles. Organization of chromatin in the interphase nucleus. Structure of chromosomes. Mitosis and meiosis.	A.W1., A.W3., A.W5., K1., SC5., SC7.
	S4 – Seminar 4 Specialized structures on the epithelial surface. The basement membrane of the epithelium. Intercellular junction types. Junctions of epithelial cell and basement membrane.	A.W1., A.W3., A.W5., K1., SC5., SC7.
	S5– Seminar 5 Types of connective tissue proper. Morphology and types of connective tissue proper. Connective tissue and adipose tissue functions.	A.W1., A.W3., A.W5., K1., SC5., SC7.
	S6 – Seminar 6 Cartilage and bone - similarities and differences in structure and function. Morphology and types of cartilage tissue. Morphology and types of bone tissue.	A.W1., A.W3., A.W5., K1., SC5., SC7.
	S7 – Seminar 7 Regulation of bone growth and remodeling. Intramembranous and endochondrial ossification. Bone remodeling. Bone fracture repair. Hormonal regulation of ossification and bone remodeling.	A.W1., A.W3., A.W5., K1., SC5., SC7.
	S8 – Seminar 8 Organization and function of the central and peripheral nervous system. Nervous tissue morphology. Structure of neurons. Glial cells in the peripheral and central nervous system. Histology of selected structures of the peripheral and central nervous system.	A.W1., A.W3., A.W4., A.W5., K1., SC5., SC7.
	S9 – Seminar 9 Muscular tissue. Types, function, contraction mechanism of smooth muscle cells, cardiomyocytes and skeletal striated muscle fibers.	A.W1., A.W3., A.W4., A.W5., K1., SC5., SC7.
	S10 – Seminar 10 Blood and bone marrow, hematopoiesis. Peripheral blood cell morphology. Hematopoietic stem cells, myeloid and lymphoid hemopoiesis.	A.W1., A.W3., A.W5., K1., SC5., SC7.
	S11 – Seminar 11 Types of blood vessels. Differences in the histological structure of arterial and venous vessels. Structure of the vascular wall in relation to the diameter of the vessel. Structure and function of endothelial cells.	A.W1., A.W3., A.W4., A.W5., K1., SC5., SC7.

	Histological structure of the heart.	
	S12 – Seminar 12 Summary seminar. Histological structure of connective, epithelial, muscular and nervous tissue.	A.W1., A.W2., A.W3., A.W4., A.W5., K1., SC5., SC7.
	S13 – Seminar 13 The function of the endocrine glands. The hypothalamic-pituitary-endocrine axis. Functions of the endocrine organs and their regulation.	A.W1., A.W3., A.W4., A.W5., K1., SC5., SC7.
	S14 – Seminar 14 Hormonal regulation of the female reproduction cycle. Oogenesis. Female reproductive organ morphology. Influence of the phases of the reproductive cycle on the morphology of inner reproductive organs.	A.W1., A.W2., A.W3., A.W5., K1., SC5., SC7.
	S15 – Seminar 15 Spermatogenesis and spermiogenesis. Hormonal regulation of spermatogenesis and spermiogenesis. Male reproductive organs morphology. The secretory function of male accessory glands.	A.W1., A.W2., A.W3., A.W5., K1., SC5., SC7.
	S16 – Seminar 16 Immune system - structure and function. Morphology of central and peripheral immune organs. Types, morphology and function of lymphocytes.	A.W1., A.W3., A.W5., K1., SC5., SC7.
	S17 – Seminar 17 Functions of the oral mucosa. Morphology of the major and minor salivary glands. Saliva production. Types of tongue papillae. The structure of taste buds.	A.W1., A.W3., A.W4., A.W5., K1., K1., SC5., SC7.
	S18 – Seminar 18 Tooth and periodontal development. Physiological tooth movements: eruption, mesial drift, orthodontic movements.	A.W1., A.W2., A.W3., A.W5., K1., SC5., SC7.
	S19 – Seminar 19 Motor and secretory activity of the digestive tract. Differences in the structure and function of the esophagus, stomach, small and large intestine.	A.W1., A.W3., A.W4., A.W5., K1., SC5., SC7.
	S20 – Seminar 20 Large glands of the digestive system and their functions. Morphology and function of the liver and pancreas - participation in the processes of digestion. Endocrine activity of the digestive system.	A.W1., A.W3., A.W5., K1., SC5., SC7.
	S21 – Seminar 21 The function of the conducting portion of the respiratory system. The mechanism of gas exchange in the lungs. The role of surfactant in the process of gas exchange.	A.W1., A.W2., A.W3., A.W4., A.W5., K1., SC5., SC7.
	S22 – Seminar 22 Endocrine and exocrine functions of the kidneys. Morphology and function of the nephron. Regulation of urine filtration and concentration processes. Histology of the juxtaglomerular apparatus - functions of the renin–angiotensin system.	A.W1., A.W3., A.W5., K1., SC5., SC7.
	S23 – Seminar 23 Skin and sensory organs. Morphology of the epidermis and its derivatives. Skin functions. Structure and function of the mammary gland. Histological structure of the eyeball and retina.	A.W1., A.W3., A.W4., A.W5., K1., SC5., SC7.
	S24 – Seminar 24	A.W1., A.W5.,

	Review of histological slides - microscopic anatomy.	K1., SC5., SC7.
	S25 – Seminar 25 Summary seminar, histological structure of the digestive, urinary, respiratory, lymphatic, male and female reproductive systems, skin and sense organs.	A.W1., A.W2., A.W3., A.W4., A.W5., K1., SC5., SC7.
	S1 – Seminar G1 Pedigrees drawing. Inheritance types. Genomic imprinting. Principles of subjective examination in medical genetics (including pedigree drawing). Types of inheritance (multifactorial, autosomal dominant and recessive, X-linked, mitochondrial), genomic imprinting. Genetic diseases in dentistry (e. g. Gardner syndrome, Ehlers-Danlos syndrome, MSXI and PAX9 gene mutations, mandibular-facial dysostosis, cleidocranial dysplasia, amelogenesis imperfecta, dentinogenesis imperfecta, Prader-Willi syndrome).	B.W17., B.W18., B.U5.
	S2 – Seminar G2 Basics of cytogenetics and molecular genetic techniques. Diagnostic methods in medical genetics: karyotyping, FISH, CGH, aCGH, Sanger DNA sequencing, next generation sequencing. Types of mutations and chromosome aberrations. Basics of cytogenetic nomenclature. Genetic diseases in dentistry (including Down syndrome, Turner syndrome, Klinefelter syndrome, Edwards syndrome, Patau syndrome, Cri du chat syndrome).	B.W17., B.W18., B.U5.
	C1 – Class 1 Various cell types. Principles of working with an optical microscope. Observation of different types of cells in an optical microscope; isolated smooth muscle, cultured fibroblasts, nerve cells impregnated with silver salts.	A.W1., A.W3., A.W5, A.U2., K1., S8., SC5., SC7.
	C2 – Class 2 Cellular compartments. Ultrastructure of cytoplasmic organelles. Mitochondria, lysosomes, peroxisomes, microtubules, Golgi apparatus, smooth and rough endoplasmic reticulum in transmission electron micrographs.	A.W1., A.W3., A.W5., AU2., K1., S8., SC5., SC7.
	C3 – Class 3 Cell division. Structure and function of the cell nucleus. Interphase nucleus. Cell morphology in mitosis and meiosis. Cell division of cultured fibroblasts.	A.W1., A.W3., A.W5., AU2., K1., S8., SC5., SC7.
	C4 – Class 4 Epithelial tissue, glands - histological structure. Histological structure and types of epithelial tissue. Glandular tissue. Types of glands.	A.W1., A.W3., A.W5., A.U2., K1., S8., SC5., SC7.
	C5 – Class 5 Connective tissue proper and adipose tissue - histological structure.	A.W1., A.W3., A.W5., A.U2., K1., S8., SC5., SC7.
	C6 – Class 6 Cartilage and bone tissue - histological structure.	A.W1., A.W3., A.W5., A.U2., K1., S8., SC5., SC7.
	C7 – Class 7 Bone formation. Intramembranous and early stage of endochondrial ossification. Histological structure of the joint capsule and synovial membrane.	A.W1., A.W3., A.W5., A.U2., K1., S8., SC5., SC7.
	C8 – Class 8 Nervous tissue, central and peripheral nervous system - histological structure.	A.W1, A.W3, A.W4, A.W5, A.U2., K1., S8., SC5., SC7.
	C9 – Class 9 Histological structure of muscle tissues. Smooth muscle tissue, cross-striated skeletal muscle and	A.W1., A.W3., A.W4., A.W5.,

	cardiac muscle.	A.U2., K1., S8., SC5., SC7.
	C10 – Class 10 Types of blood cells and red bone marrow. Blood film slide, bone marrow smear. Histological structure of the red bone marrow.	A.W1., A.W3., A.W5., A.U2., K1., S8., SC5., SC7.
	C11 – Class 11 Histological structure of arteries, veins, capillaries and heart.	A.W1., A.W3., A.W5., A.U2., K1., S8., SC5., SC7.
	C12 – Class 12 Review of histological slides - general histology.	A.U2., K1., S8., SC5., SC7.
	C13 – Class 13 Histological structure of selected endocrine glands. Adenohypophysis, neurohypophysis, parathyroid, thyroid, adrenal, pineal gland.	A.W1., A.W3., A.W4, A.W5., A.U2., K1., S8., SC5., SC7.
	C14 – Class 14 The female reproductive system. Histological structure of the ovary, fallopian tube, uterus (proliferative phase and secretory phase), vagina, vestibule of vagina.	A.W1., A.W2., A.W3., A.W4, A.W5., A.U2., K1., S8., SC5., SC7.
	C15 – Class 15 Male reproductive system. Histological structure of the male reproductive organs. Testis, vas deferens, epididymis, prostate.	A.W1., A.W2., A.W3., A.W4, A.W5., A.U2., K1., S8., SC5., SC7.
	C16 – Class 16 Lymphatic system. Histological structure of the organs of the lymphatic system. Central and peripheral lymphatic organs: thymus, lymph node, palatine tonsil, white and red pulp of the spleen.	A.W1., A.W3., A.W5., A.U2., K1., S8., SC5., SC7.
	C17 – Class 17 Oral cavity. Histological structure of salivary glands and tongue. Filiform papillae, circumvallate papillae (taste buds), von Ebner gland, sublingual gland, parotid gland.	A.W.1, A.W3., A.W4., A.W5., A.U2., K1., S8., SC5., SC7.
	C18 – Class 18 Tooth and periodontal organs. Histological structure of the tooth and periodontium at various stages of development. Enamel organ, apical foramen.	A.W1., A.W2., A.W3, A.W4., A.W5., A.U2., K1., S8., SC5., SC7.
	C19 – Class 19 Gastrointestinal tract. Histological structure of the esophagus, stomach, jejunum, duodenum and colon.	A.W1., A.W3., A.W4., A.W5., A.U2., K1., S8., SC5., SC7.
	C20 – Class 20 Gastrointestinal glands. Histological structure of the liver and pancreas. Lymphatic tissue of the digestive system - ileum, appendix.	A.W1., A.W3., A.W.5, A.U2., K1., S8., SC5., SC7.
	C21 – Class 21 Respiratory system. Histological structure of the respiratory system. Lung - structure and function of different types of pneumocytes. Conducting portion - trachea, bronchi, bronchioles.	A.W1., A.W3., A.W5, A.U2., K1., S8., SC5., SC7.
	C22 – Class 22 Urinary system - histological structure. Renal cortex and medulla, renal corpuscle, nephron, collecting ducts, ureter and urinary bladder.	A.W1., A.W3., A.W5, A.U2., K1., S8., SC5., SC7.

	C23 – Class 23 Skin and sensory organs. Histological structure of the skin and its appendages. Active and inactive mammary gland. Histological structure of the eye.	A.W1., A.W3., A.W4., A.W5., A.U2., K1., S8., SC5., SC7.
	C24 – Class 24 Practical intermediate examination.	A.U2., K1., S8., SC5., SC7.
	C25 – Class 25 Review of histological slides before final examination - general histology and microscopic anatomy.	A.U2., K1., S8., SC5., SC7.

7. LITERATURE

Obligatory

1. Junqueira's Basic Histology: Text and Atlas, last edition
2. Daniel J. Chiego, Jr.: "Essentials of Oral Histology and Embryology": A Clinical Approach, Elsevier 5th Edition, 2018.
3. Sadler T. W. "Langman's Medical Embryology", last edition
4. Gartner L. P., "Textbook of Histology", Elsevier, last edition,
5. Medical genetics by Jorde Lynn B., Carey John C., Bamshad Michael J. Mosby Elsevier, last edition.

Supplementary

1. Nanci A. "Ten Cate's - Oral Histology", Elsevier, last edition.

8. VERIFYING THE EFFECT OF LEARNING

Code of the course effect of learning	Ways of verifying the effect of learning	Completion criterion
A.W1., A.W2, A.W3, A.W4, A.W5., K1., S8., SC5., SC7.	Intermediate examination, final examination.	Minimum 60 % of good answers in total.
A.W1., A.U2., K1., S8., SC5., SC7.	Practical class – notebook drawings, practical intermediate examination, practical final examination.	Credit from the teacher; final examinations: identification of at least 6 slides out of 10.
B.W17, B.W18.	Intermediate examination.	Minimum 50 % of good answers in total.
B.U5	Oral report on the task performed	Correct draw up pedigree based clinical description of the family and interpretation genetic test result.

9. ADDITIONAL INFORMATION

1. The student research club is supervised by Izabela Młynarczuk-Biały, M.D, Ph.D. Associate professor and Ryszard Galus, M.D. Ph.D., Associate professor
   http://histologia.wum.edu.pl - Studenckie Koło Naukowe

General regulations – Histology, cytology and embryology for EDD students
2025/2026

Organization of classes and seminars

1. Teaching of Histology with Embryology and Cytology is conducted in the form of practical classes, seminars, and lectures.
2. Attendance at practical classes, seminars, and lectures is mandatory. Being more than 15 minutes late will be treated as an absence.
3. Classes begin with a seminar, which is a compulsory part of the session.
4. Students are expected to be prepared for the classes. The scope of material covered in each class is provided in the "Class Program."
5. During practical classes, students discuss the topics with the assistant and examine microscope slides, diagrams, and electron micrographs. Images of tissues and organs observed under the microscope must be drawn and described (with a legend) in a notebook.
6. Microscopes are placed on tables or loaned in exchange for a student ID. After viewing the slides, the microscope light must be turned off and the microscope covered. It is forbidden to remove slides, electron micrographs, microscopes, or their parts from the classroom.
7. Before tests and exams, each student group may borrow a set of demonstration slides. Sets can be exchanged multiple times. Before returning or exchanging a set, slides must be arranged according to the attached list. Students are financially responsible for any lost or damaged slides.

Presence in the classes and seminars

1. To pass the semester, students must attend lectures, seminars, and practical classes, and successfully complete all practical sessions.
2. To pass a practical class, students must receive a positive grade for their knowledge of the material assigned for that class and must complete and correctly describe the drawings of the slides.
3. The days scheduled for practical classes and tests are considered mandatory class days.
4. A maximum of two absences from lectures and two absences from practical classes preceded by a seminar are allowed per semester. A third absence results in failing the semester and disqualification from the test, regardless of the reason for the absence.
5. Classes missed due to an excused absence or not passed due to lack of preparation must be made up in a form determined by the Head of the Department, at a time specified by them.
6. The Genetics course is conducted by the Department of Genetics. The person responsible for organizing the classes and communicating with students is Anna Walczak, Ph.D. (anna.walczak@wum.edu.pl).

Credit

1. Test dates are agreed upon with the Teaching Council and are not subject to change.
2. The Department organizes two test dates for each section.
3. To be eligible for the test, students must attend lectures, seminars, and practical classes, and complete all required coursework.
4. Tests in general and microscopic anatomy consist of a practical and a theoretical part. The practical part must be passed before the scheduled retake date of the theoretical test.
5. Tests in embryology and the histological structure of oral cavity and tooth do not include a practical part.
6. Tests for the entire course, both first and second attempts, are conducted as in-person electronic exams using the examination system.
7. Practical intermediate examinations are held in class groups. Failure to pass a practical intermediate examination disqualifies the student from the final exam.
8. The third and final test attempt (commission exam) is conducted in a form determined by the Head of the Department, with approval from the Dean of the Faculty of Dental Medicine.
9. The test on the histological structure of the oral cavity and the tooth consists of 30 single-choice questions and lasts of 30 minutes. The tests in general histology, embryology, and microscopic anatomy each comprise 50 single-choice questions and last 50 minutes.
10. To pass the test, at least 60% of the answers must be correct.
11. Any concerns or irregularities regarding the examination or question content must be reported only via the Examination Portal to the Examination Team during or immediately after the test, before leaving the computer room (per "WUM Written Exam Regulations," point 16). Students may review questions only via the Examination Portal immediately after the test, before leaving the room
12. Students can review the questions immediately after the test only through the electronic examination system.
13. Students may submit objections to the content of the questions only through the electronic examination system.
14. In case of absence from the test due to medical reasons, the student must submit a medical certificate within three working days from the scheduled test date, otherwise a failing grade will be recorded.

Final examination

1. The final exam covers the content included in the program of practical classes, seminars, and lectures.
2. To be eligible for the exam, students must pass all tests required by the curriculum.

3. Exam dates are agreed upon with the Teaching Council and are not subject to change.
4. The exam consists of two independent parts: practical and theoretical.
5. Failure to pass either the practical or theoretical part results in a failing grade for the entire exam.
6. The Head of the Department may grant permission for students to take the oral exam during the early session, provided they have achieved a total score at the 96th percentile or higher from the intermediate tests. The Department will inform students who meet these criteria. A student must submit a written request to take the exam during the early session (the application form is available on the Department's website).
7. In case of absence from the exam due to medical reasons, the student must submit a medical certificate within three working days from the scheduled exam date, otherwise a failing grade will be recorded.
8. The retake exam is held during the retake session. If the retake exam is not passed, the Dean may, upon the student's request, schedule a commission exam.

Practical examination

1. The practical exam is conducted in a mini-OSCE format.
2. The practical exam consists of identifying 10 histological slides. A minimum of 6 correctly identified slides is required to pass. For each additional correctly identified slide, the student receives 1 point, and identifying all 10 slides earns 5 points.
3. Students who fail the practical part of the exam on the first attempt must take a test, and a positive result will be treated as a passing grade for the retake (in this case, the student retakes only the practical exam).
4. Students who pass the practical part of the exam on the first attempt but fail the theoretical test do not need to retake the practical exam during the second exam session (in this case, the student retakes only the theoretical exam).

Theoretical examination

1. The theoretical part of the exam is conducted as an in-person electronic test, consisting of 100 single-choice questions and lasting 100 minutes.
2. The test includes questions from general medical knowledge (general histology, detailed histology, and embryology), as well as from the histology of oral structures and teeth.
3. To pass the theoretical exam, at least 60% of the answers must be correct.
4. Any concerns or irregularities regarding the exam or question content must be reported only via the Examination Portal to the Examination Team during or immediately after the test, before leaving the computer room (per "WUM Written Exam Regulations," point 16). Students may review questions only via the Examination Portal immediately after the test, before leaving the room.
5. Students can review the questions immediately after the exam only through the electronic examination system.
6. Students may submit objections to the content of the questions only through the electronic examination system.

Final grade

1. The final exam grade is based on the results of both parts of the exam. The final grade includes points earned from both the practical and theoretical parts.
2. Points from the practical exam are added only for students who meet the criteria for passing the theoretical test.
3. Points from the practical exam are added only once. In the retake session, practical exam points are not awarded.

Position of the Chair regarding cheating during examinations

Cheating during exams and tests is a violation of ethical principles and the Study Regulations of the Medical University of Warsaw (WUM). Students who actively or passively participate in such practices will be removed from the exam and receive a failing grade. Additionally, the Department will initiate disciplinary proceedings against those involved in cheating.

Active cheating refers to copying answers from other students or using unauthorized notes or electronic devices during the exam. Bringing such devices to tests and exams is strictly prohibited.

Passive participation in cheating means allowing others to copy one's answers. Therefore, students are required to exercise due diligence to prevent others from copying their responses.

The Head of the Department requires both students and examiners to strictly adhere to these rules.

ATTENTION

The final 10 minutes of the last class in the block/semester/year should be allocated to students' Survey of Evaluation of Classes and Academic Teachers