

**MINISTRY OF HEALTH OF THE REPUBLIC OF UZBEKISTAN
TASHKENT PEDIATRIC MEDICAL INSTITUTE
PATHOLOGIC PHYSIOLOGY, HISTOLOGY**



APPROVEIT "

Vice Rector for Academic Affairs

Khaitov K. N.

2021 y.

	510000	Healthcare
Research area:	5 510 200	Pediatric case
for	5 510 100	Treatment
	5 111 000	Professional education (5510100 Treatment)
	5510900	Medical Biology

2.03 ON THE SUBJECT OF HISTOLOGY

EDUCATIONAL-AND METHODOLOGICAL COMPLEX

I-II COURSE

TASHKENT - 2021

Educational and methodical complex for the discipline Histology by direction educational institutions: 5510200 «Pediatric business»; 5510100"Medical business» 5111000; Vocational education (5510100 Medical business); 5510900 "Medical Biology" was developed on the basis of the modular program Histology, approved by the order of the Ministry of Health of the Republic of Uzbekistan from 2020 "08" 09 No. 236.

Compilers and:

N. B. Zokirova- Associate Professor of the Department of Pathological Pathology, Histology of TashPMI, Doctor of Medical Sciences

Reviewers:

K. R. Tukhtaev -- Professor of the Department of Histology and Medical Biology of TMA

M. Kh. Rakhmatova - Chair of the Departments of Histology and Medical Biology TSSI, Doctor of Medical Sciences, Associate Professor

Educational and methodical complex for the discipline approved by the Central Methodological Council of TashPMI Protocol No. __ 10 __ of " __ 23 __ " __ 06 __ 2021y.e

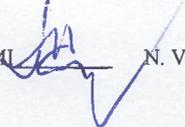
Head of the Department,


C.A. Begmanov

Dean I-Pediatrics Department
faculty of TashPMI


A. A. Rakhmatullayev

Head of the training department of TashPMI


N. V. Agzamova.

CALENDAR AND THEMATIC PLAN

2021-2022 academic year

Department of: Pathologic physiology, Histology

Subject: Histology, embryology, Cytology,

Faculty: I-II Pediatrics, Treatment, Medical-pedagogical.

Course: 2, semester: 3

Hours allocated per semester: lecture-18, practical lesson - 54

Distance learning sessions

№	Lesson topic	hours
1	Leather and its derivatives. Respiratory system Intestinal tube.	2
2	Glands of the digestive system	2
3	Urinary system. Genital organs. Embryology. Sense organs.	2
	total	6

Practical exercises

№	Lesson topic	Hours
1	Leather and its derivatives.	3
2	Respiratory system.	3
3	Digestive system. Oral cavity. The structure of the tongue and its papillae. The structure of the salivary glands and their classification	3
4	Digestive system. Tonsils and esophagus.	3
5	Digestive system. Stomach. Newborn stomach	3
6	Digestive system. Small and large intestine. Appendix and rectum	3
7	Digestive system. Liver and gallbladder, Pancreas	3
8	Urinary system. The structure of the kidney. Nephron. Urine formation. Bladder. Ureter, its structure	3
9	Male reproductive system. Testes, epididymis of the testes. The vas deferens, the structure of the prostate gland	3
10	The female reproductive system. Ovary. The uterus is its structure. The uterus of the newborn. The mammary gland and its structure.	3
11	Fundamentals of Human Embryology. Sex cells.	3
12	Fundamentals of Human Embryology. Provisional organs.	3
13	Nervous system. Spinal nodes. Peripheral nerves. The autonomic nervous system.	3
14	Nervous system. Cortex. Cerebellum	3
15	ense organs. Visual analyzer. Olfactory organ	3
16	Sense organs. Hearing and balance organs	3
PC (according to schedule)		
	total	48

CALENDAR AND THEMATIC PLAN

2021-2022 academic year

Department of: Pathologic physiology, Histology

Subject: Histology, embryology, Cytology,

Faculty: I-II Pediatrics, Treatment, Medical-pedagogical.

Course: I, semester: 2

Hours allocated per semester: lecture-18, practical lesson – 52/8

Distance learning sessions

№	Lesson topic	hours
1	Introduction. Cytology. Fabrics. Epithelial tissue. Glands.	2
2	Blood. Hemocytopoiesis	2
3	The connective tissue itself. Cartilage and bone tissue	
4	Muscle. Nerve tissue.	2
5	The cardiovascular system	2
6	Organs of hematopoiesis and immunological protection	2
	Жами	12

Practical exercises

№	Lesson topic	Hours
1	Microtechnics. StageS of microtechnics. Plasmolemma, structure, surface structuresы, intercellular connections.	4
2	General cytology. Cytoplasm and nucleus. Cytoplasm, organelles, inclusion	4
3	Fabrics. Epithelial tissue. Integumentary epithelium, varieties, structure.	4
4	Glandular epithelium, glands.	4
5	Blood and lymph. Blood of a newborn. Shaped blood elements.	4
6	Hematopoiesis and its stages.	4
7	Connective tissue. Loose fibrous connective tissue	4
8	Tightly fibrous connective tissue Connective tissue with special properties	4
9	Cartilage tissue.	4
10	Bone tissue.	4
11	AM muscle tissue.	4
12	Nervetissue, neuron, and nerveendings. Neuroglia, development of nervetissue	4
13	Blood vessels. Arteries and Veins, their structure and types.	4
14	Arteriovenular anastomoses (ABAS) are capillaries. Structure of the heart wall. Newborn heart	4
15	Central organs of hematopoiesis and immunological protection. Red bone marrow, thymus gland.	4
PC (according to schedule)		
	total	60

CALENDAR AND THEMATIC PLAN

2021-2022 academic year

Department of: Pathologic physiology, Histology

Subject: Histology, embryology, Cytology

Faculty: medical biology

Course: I, semester: 3

Hours allocated per semester: lecture-18, practical lesson – 63

Distance learning sessions

№	Lesson topic	hours
1.	Introduction to the subject of histology. Cytology	2
2.	Fabrics. Epithelial tissue	2
3.	Internal fabrics. Blood. Hemocytopoiesis	2
4.	The connective tissue itself, cartilage and bone tissue.	2
5.	Muscle tissue	2
6	Nerve tissue	
7.	The cardiovascular system	2
8.	Organs of hematopoiesis and immunological protection	2
9.	Endocrine system	2
		18

Practical exercises

№	Lesson topic	Hours
1	Introduction to the subject of histology. Lab: microtechnology	4
2	Cytology	4
3	The concept of fabrics. Epithelial tissue. Glandular epithelium	4
4	Blood and lymph. Laboratory work: technique for sentencing and staining a blood smear.	4
5	Blood and lymph. Stages of embryonic hematopoiesis and their features. Laboratory work: identification of hematopoietic elements under a microscope.	4
6	Connective tissue. The connective tissue itself. Connective tissue with special properties	4
7	Skeletal tissue (cartilage tissue)	4
8	Skeletal tissue (bone tissue)	4
9	Muscle tissue	4
10	Nerve tissue I, II.	4
11	Cardiovascular system I	4
12	Cardiovascular system II	4
13	Organs of hematopoiesis and immunological protection I	4
14	Organs of hematopoiesis and immunological protection II	4
15	Endocrine system I	4
16	Endocrine system II	3
PC (according to schedule)		
всего		63

CALENDAR AND THEMATIC PLAN

2021-2022 academic year

Department of: Pathologic physiology, Histology

Subject: Histology, embryology, Cytology

Faculty: medical biology

Course: 1, semester: 2

Hours allocated per semester: lecture-18, practical lesson – 63

Distance learning sessions

Lesson topic	hours	Lesson topic
1.	Respiratory system. Leather and its derivatives.	2
2.	Digestive system. Organs of the oral cavity. Esophagus.	2
3.	Digestive system. Stomach. Small and large intestine.	2
4.	Digestive system. Liver. Pancreas	2
5.	Urinary system. Male reproductive system	2
6	Female reproductive system	2
7.	Fundamentals of Human Embryology	2
8.	Nervous system.	2
9.	Sense organs. The organ of vision. The organ of hearing and balance.	2
Всего:		18

Practical exercises

№	Lesson topic	Hours
1	Leather and its derivatives.	4
2	Respiratory system.	4
3	Digestive system. Oral cavity. The structure of the tongue and its papillae. The structure of the salivary glands and their classification	4
4	Digestive system. Tonsils and esophagus.	4
5	Digestive system. Stomach. Newborn stomach	4
6	Digestive system. Small and large intestine. Appendix and rectum	4
7	Digestive system. Liver and gallbladder, Pancreas	4
8	Urinary system. The structure of the kidney. Nephron. Urine formation. Bladder. Ureter, its structure 4	4
9	Male reproductive system. Testes, epididymis of the testes. The vas deferens, the structure of the prostate gland 4	4
10	The female reproductive system. Ovary. The uterus is its structure. The uterus of the newborn. The mammary gland and its structure. four	4
11	Fundamentals of human embryology. Sex cells. four	4
12	Fundamentals of human embryology. Provisional organs. four	4
13	Nervous system. Spinal nodes. Peripheral nerves. The autonomic nervous system. four	4
14	Nervous system. Cortex. Cerebellum 4	4
15	Sense organs. Visual analyzer. Organ of smell 4	4
16	Sense organs. Hearing and balance organs 3	3
PC (according to schedule)		
Всего		63

INTRODUCTION

Relevance of the training module and its place in higher education

The module on histology, cytology, and embryology belongs to the block of preclinical modules of the curriculum, is taught in 1-2 courses and is important in forming the basics of medical knowledge in a general pediatrician.

The curriculum of the module on histology, cytology, and embryology covers the issues of embryonic and postembryonic development of cells, tissues, organs, and systems of the human body; their microscopic and submicroscopic structure and patterns of vital activity; history, trends, and prospects for the development of the subject as a science, and thereby creates a basis for future general practitioners for clinical thinking, justification of the disease and its symptoms.

The fundamental basis for teaching the module on histology, cytology, and embryology is biology, chemistry, physics, anatomy, physiology, and biological chemistry. In combination with other fundamental medical and biological modules, it helps to obtain information about the whole organism, and thereby contributes to the development of students' abilities to clinical thinking. The module on histology, cytology, and embryology will further serve as the basis for teaching modules on pathological anatomy, pathological physiology, and pharmacology, as well as other modules on clinical disciplines.

The curriculum of the module on histology, cytology, and embryology is compiled in accordance with the requirements of the State Educational Standard of the Republic of Uzbekistan and the qualification requirements for the bachelor's degree program. The topics of this module program are closely related to the topics of the programs of preclinical bachelor's degree modules of higher medical educational institutions.

2. Purpose and objectives of the training module

2.1. The purpose of the module – is for students to master the basic laws of embryonic development, microscopic and submicroscopic structure, cyto- and histophysiology of cells, tissues and organs of the human body, to acquire skills in identifying and interpreting histological preparations.

2.2. Module tasks:

- have an idea of the subject and its methods, know the classification, features of the structure and function of cells and tissues.
- master theoretical knowledge about the sources of development, microscopic and submicroscopic structure, histophysiology of organs and systems, in particular, to learn in detail the development and structure of cells, tissues and organs;
- know the patterns of age-related and adaptive changes in the body;
- master the basic methods and practical skills of working with a light microscope, which are widely used in scientific research;
- understand the importance of microstructures in clinical practice and experimental research, master basic skills of working with scientific literature, be able to compose scientific abstracts and reports.

2.3 Requirements for the level of preparedness (knowledge, skills, etc.)

The student must:

A. Have an idea:

1. about the features of taking material for histological examination, methods of tissue fixation;
2. on the spatial relationships of tissues in the composition of organs;
3. morphology of senescent cells, mechanisms of their aging and death.

B. Know and be able to use:

1. Features of the structure, function and age-related transformations of the cell structure in a living organism;
2. Age-related periodization of human life, general patterns and stages of prenatal and postnatal development;

3. Sources of development, features of structure and function, age-related changes in the main types of tissues;
4. Features of the tissue composition of all human organ systems in a developing and mature organism;
5. Understand the issues of tissue regeneration and its features due to age;
6. "read" electronograms of cells and non-cellular structures of tissues and organs.

B. Have skills:

1. Microscopy of histological preparations.
2. Calculation of the leukocyte formula in a blood smear, its analysis.
3. Solving situational problems.
4. Reading scientific literature and writing short essays.

**Lesson#1.Topic: MICROTECHNICS
Model training**

Time: 120 min.	Number of students: 14
Class location	Study room of the Department of Histology
Structure of the training session	1.Introduction 2.The theoretical part. 3.The practical part.
The purpose of the lesson: to get acquainted with the content of the main stages of manufacturing a fixed and colored histological preparation; - to get an idea of the tinctorial properties of structures in a histological preparation; -to get acquainted with the principles of operation and use of special microscopy devices for research purposes; -to consolidate the skill of microscopy of a histological preparation.	
The student should know: - basic principles of preparation of histological preparation.	
The student should be able to: - master the basic techniques for preparing fixed and colored cakes. preparations of cells, tissues and organs for light microscopy; - working on a microtome. - master the skill of working with a light microscope.	
<u>Tasks of the teacher:</u> - to test the theoretical knowledge of students about the stages of preparation of histological preparations for light and electron microscopy; - to explain the rules of working with a light microscope.	<u>Results of educational activities:</u> - know the stages of preparation of histological preparations for light and electron microscopy; - work correctly with a light microscope
Methods and means of training	Interactive method "Bee swarm", organizer "Cluster", tables, solving situational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-products, videos, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activity	
	training	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces you to the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening Clarify, ask questions

2-stage Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by students, demonstrates short videos. 2.3. Describes the scenario of the interactive method "Bee swarm", the method of creating the organizer "Cluster", запланированных planned for the lesson. 2.4. Sets tasks for solving situational problems and evaluates their solution 2.5. Evaluates the solutions of tests; 2.6 evaluates the solution of organizers.	They answer questions. They're listening. They're listening. They ask questions. They are made up of organizers. They decide and respond Make up an organizer Pass tasks on the SRS. They discuss and express their opinions.
Stage 3. Practical part (40 min)	3.1. Provides an explanation to students on the practical part of the lesson. 3.2. Shows slides on medications. 3.3. Sets tasks for students to acquire skills in the practical part of the lesson. 3.4. Checks the results of practical work.	They're listening. They ask questions. Understand what you need to pay attention to when viewing микроскопе-microscopes under a microscope They look at micro-preparations under a microscope on their own and sketch them in their albums. Present the results of their work.
Stage 4. Conclude it- Final part (10 min)	4.1. Gives a conclusion on the topic, draws students ' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal. 4.2. Assesses the degree of students ' knowledge on the theoretical and practical part of the lesson, announces grades to students. 4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.	They're listening Listening Recording

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in пределах the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly

	and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
" 3" is satisfactory	The student's answer on the topic is within the limitsax of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
" 2" is unsatisfactory	The student's answer on the topic is withinax 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Ccannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#2.Topic: CYTOLOGY
Training model

Time: 120 min.	Number of students: 14
Class location	Study room of the Department of Histology
Structure of the training session	1.Introduction 2.The theoretical part. 3.The practical part.
The purpose of the lesson: - to study the microscopic and ultramicroscopic structure and significance of the main structural components of the cytoplasm: organelles and inclusions.	
The student should know: - microscopic and ultramicroscopic structure of organelles, nuclei and cytolemmas; - determine the function of a given cell by the predominant development of certain organelles.	
The student should be able to : - distinguish between different types of inclusions on micro-preparations.	
<u>Tasks of the teacher:</u> - to test students ' theoretical knowledgeof this topic; - to explain the role of organelles, inclusions and the nucleus in the vital activity of cells;	<u>Learning outcomes:</u> - know the microscopic and ultramicroscopic structure of organelles; - are able to distinguish between membrane and non-membrane organelles of the cytoplasm of cells, based on structural and cytochemical features.
Methods andreedsand training	Interactive method "Bee swarm", organizer "Cluster", tables, solving ситуационнsituational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histologicale atlass, computer, microscopes, micro-preparations, videos, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces you to the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening Clarify, ask questions
2-stage Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by students. 2.3. Sets out the interactive method scenario "Brainstorming." 2.4. Sets tasks for solving situational problems, evaluates their solution. 2.5 test solutions; 2.6 creating organizers and filling in tables;	They answer questions. They're listening. They're listening. They ask questions. They are made up of organizers. They decide and respond Make up an organizer Pass tasks on the SRS. They discuss and express their opinions.
Stage 3. Practical part (40 min)	3.1. Provides an explanation to students on the practical part of the lesson. 3.2. Shows slides on medications. 3.3 Shows short videos 3.4. Sets tasks for students to acquire skills in the practical part of the lesson. 3.5. Checks the results of practical work.	They're listening. They ask questions. Understand what you need to pay attention to when viewing микропре- микропре-microscopes under a microscope They look at micro-preparations under a microscope on their own and sketch them in their albums. Present the results of their work.
Stage 4. Conclude it- Final part (10 min)	4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal. 4.2. Assesses the degree of students' knowledge on the theoretical and practical part of the lesson, announces grades to students. 4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.	They're listening Listening Recording

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in пределах the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" is unsatisfactory	The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Cannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#3.Topic: SINGLE-LAYER EPITHELIUM Training model

Inremya: 120 min.	Number of students: 14
MMES of the lesson	Study room of the Department of Gynaecology and
Structure of the training session	1.Introduction 2.The theoretical part. 3.Practical part.
The purpose of the lesson: Study of classification, sources of development and structure of various types of epithelium .	
The student should know: - definition of the concept of " tissue"; - morphofunctional features of epithelial tissue; - classification of the integumentary epithelium.	
The student should be able to : - recognize different types of epithelial tissue on the preparations.	
<u>The teacher's tasks are:</u> - to test students ' theoretical knowledge on this topic; - to explain the peculiarities of the structure of epithelial tissue;	<u>Results of educational activities:</u> - they know the structural features of epithelial tissue; - identify single-layer epithelium in various organs; - show the distinctive features of multi-row epithelium from single-row ones;

<ul style="list-style-type: none"> - - to teach them to identify single-layer epithelium in various organs; - - to show the distinctive features of multi-row epithelium from single-row ones; - - to indicate the organ specificity of epithelial tissue; - on the peculiarities of the structure of epithelium with the functions performed by organs. 	<ul style="list-style-type: none"> - - know the organ specificity of epithelial tissue; - associate the structural features of epithelium with the functions performed by organs; - recognize various types of epithelial tissue on micro-preparations.
Methods and training	Interactive method "Brainstorming", organizer "Cluster", tables, solving situational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, videofilms, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces you to the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening Clarify, ask questions
2-stage Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by students, demonstrates short videos. 2.3. Sets out the scenario of the interactive method "Brainstorming"; 2.4. Sets tasks for solving situational problems. 2.5. Sets a task based on test solutions; 2.6. Filling in tables and organizers.	They answer questions. They're listening. They're listening. They ask questions. They are made up of organizers. They decide and respond Make up an organizer Pass tasks on the SRS. They discuss and express their opinions.
Stage 3. Practical part (40 min)	3.1. Provides an explanation to students on the practical part of the lesson. 3.2. Shows slides and videos on medications.	They're listening. They ask questions. Understand what you need to pay attention to when viewing микропре-

	<p>3.3. Sets tasks for students to acquire skills in the practical part of the lesson.</p> <p>3.4. Checks the results of practical work.</p>	<p>microscopes under a microscope They look at micro-preparations under a microscope on their own and sketch them in their albums. Present the results of their work.</p>
<p>Stage 4. Conclude it- Final part (10 min)</p>	<p>4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal.</p> <p>4.2. Assesses the degree of students' knowledge on the theoretical and practical part of the lesson, announces grades to students.</p> <p>4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.</p>	<p>They're listening</p> <p>Listening</p> <p>Recording</p>

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in пределах the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" is unsatisfactory	The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Cannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#4.Subject: MULTI-layer ETHE PITELIUM. GLANDS.

Training model

Inremya: 120 min.	Number of students: 14	
MMES of the lesson	Study room of the Department of Gynaecology and	
Structure of the training session	1.Introduction 2.The theoretical part. 3.Practical part.	
The purpose of the lesson: Study of classification, sources of development, microscopic and ultramicroscopic structure of multilayer epithelium and glands.		
The student should know: - sources of development of multilayer epithelium and glands; - features of the structure of multilayer squamous keratinizing epithelium; - classification of exocrine glands by structure and method of excretion of secretions; - identify different types of integumentary and glandular epithelium		
The student should be able to : - recognize different types of layered epithelium on the preparations.		
<u>Tasks of the teacher:</u> - to test students ' theoretical knowledge on this topic; - to generalize and systematize knowledge about the structure and function of the integumentary and glandular epithelium. - summarize and deepen your knowledge about - explain medications using a computer. - teach to identify multilayer and glandular epithelium under a microscope, to find the main structural elements on the preparations.	<u>Results of educational activities:</u> - they know the structural features of the integumentary and glandular epithelium; - identify multilayer epithelium in various organs; - show the distinctive features of multilayer epithelium from single-layer; - know the organ specificity of epithelial tissue; - associate the structural features of epithelium with the functions performed by organs; - recognize various types of multilayer epithelial tissue on micro-preparations.	
Methods and means of training	Interactive method "Brainstorming", organizer "Cluster", tables, solving situational problems.	
Forms of training	Работа Collective and group work, presentations.	
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, video films, whiteboard, chalk.	
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.	

Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee
1-stage Introduction	1.1. Checks traffic	Listen, record

(10 min)	1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	They're listening Clarify, ask questions
2-stage Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by students, demonstrates short videos. 2.3. Sets out the scenario of the interactive method "Brainstorming"; 2.4. Assesses students' knowledge of the interactive game "Brainstorming?": 1) the work of groups; 2) the work of individual participants. 2.5. Sets tasks for solving situational problems. 2.6. Sets a task based on test solutions; 2.7. Evaluates the implementation of the SRS.	They answer questions. They're listening. They're listening. They ask questions. They are made up of organizers. They decide and respond Make up an organizer Pass tasks on the SRS. They discuss and express their opinions.
3-Stage 3. Practical part (40 min)	3.1. Gives students an explanation of the practical part of the lesson. 3.2. Shows slides and videos on medications. 3.3. Sets tasks for students to acquire skills in the practical part of the lesson. 3.4. Checks the results of practical work.	They're listening. They ask questions. Understand what you need to pay attention to when viewing микропрепаратов under a microscope They look at micro-preparations under a microscope on their own and sketch them in their albums. Present the results of their work.
4-Stage 4. Conclude it- Final part (10 min)	4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal. 4.2. Assesses the degree of students' knowledge on the theoretical and practical part of the lesson, announces grades to students. 4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.	They're listening Listening Recording

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and

	confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Csolves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in пределах the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limitsax of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" is unsatisfactory	The student's answer on the topic is withinax 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Ccannot solve operational problems. Doesn't perform any tasks on the topic during the session

**Lesson#5/6.Subject: BLOOD. HEMATOPOIESIS.
Training model**

Time: 120 min.	Number of students: 14
Class location	Study room of the Department of Histology
Structure of the training session	1.Introduction 2.The theoretical part. 3.The practical part.
The purpose of the lesson: - to study the morphology and functional significance of the formed elements of blood and lymph; - to study the morphology and features of differentiation of blood cells in the process of embryonic and postembryonic hematopoiesis.	
The student should know: - the structure of blood as a tissue; - morphofunctional characteristics of blood cell elements; - the main stages of embryonic and postembryonic hematopoiesis.	
The student should be able to : - find shaped blood elements in blood smears ; - learn to distinguish the stages of differentiation of cells of the granulocytic, lymphocytic, monocytic, platelet and erythrocytic series.	
<u>Tasks of the teacher:</u> - to test the theoretical knowledge of students on this topic; - to explain the features of the structure of shaped blood	<u>The results of educational activities:</u> - know morfologiyu functional significance of formed elements of blood and lymph;

<p>elements and teach them to identify them in blood smears;</p> <ul style="list-style-type: none"> - to show the distinctive features of the stages of differentiation of cells of the granulocyte, lymphocyte, monocyte, platelet and erythrocyte series. - pay attention to the age-related features of the hemogram. 	<ul style="list-style-type: none"> - know the morphology and features of the differentiation of blood cells during embryonic and postembryonic hematopoiesis; - identify the formed elements in blood smears; - distinguish the stage of differentiation of cells of the granulocytic, lymphocytic, monocytic, erythrocytic and thrombocytic series in bone marrow smears; - know the age characteristics of the haemogram.
Methods and means of training	Interactive method "Brainstorming", organizer "Cluster", tables, solving situational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, videos, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Этапы Work stages and time (120 min)	Activities	
	training	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces you to the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening Clarify, ask questions
2-stage Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by students. 2.3. Sets out the interactive method scenario "Brainstorming." 2.4. Assesses students' knowledge of the interactive game "Brainstorming?": 1) the work of groups; 2) the work of individual participants. 2.5. Sets tasks for solving situational problems, evaluates their solution, 2.6. Test solutions; 2.7. Drawing up organizers and filling out tables;	They answer questions. They're listening. They're listening. They ask questions. They are made up of organizers. They decide and respond Make up an organizer Pass tasks on the SRS. They discuss and express their opinions.
Stage 3. Practical part (40 min)	3.1. Provides an explanation to students on the practical part of the lesson. 3.2. Shows slides on medications. 3.3. Shows short videos	They're listening. They ask questions. Understand what you need to pay attention to when viewing микропре-

	<p>3.4. Sets tasks for students to acquire skills in the practical part of the lesson.</p> <p>3.5. Checks the results of practical work.</p>	<p>microscopes under a microscope They look at micro-preparations under a microscope on their own and sketch them in their albums. Present the results of their work.</p>
<p>Stage 4. Conclude it- Final part (10 min)</p>	<p>4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal.</p> <p>4.2. Assesses the degree of students' knowledge on the theoretical and practical part of the lesson, announces grades to students.</p> <p>4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.</p>	<p>They're listening</p> <p>Listening</p> <p>Recording</p>

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" is unsatisfactory	The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Cannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#7/ 8. Subject: ACTUALLY CONNECTIVE TISSUE.

Training model

Time: 120 min.	Number of students: 14
Class location	Study room of the Department of Histology
Structure of the training session	1.Introduction 2.The theoretical part. 3.The practical part.
The purpose of the lesson: - to study the microscopic and ultramicroscopic structure, histophysiology and interaction of structural components of fibrous connective tissues.	
The student should know: - general characteristics and classification of connective tissue; - sources of development of connective tissue proper; - localization and principles of structure of connective tissue proper; - age-related changes in connective tissue proper; - interaction of blood and connective tissue proper.	
The student should be able to : -distinguish between the structural components of the connective tissue proper at the microscopic and ultramicroscopic levels.	
<u>Tasks of the teacher:</u> - to test the theoretical knowledge of students on this topic; - to explain about the features of the structure of connective tissue cells and teach them to identify them on histological preparations; - to indicate the distinctive features of the structure of collagen, elastic and reticular fibers; - to understand the morphological features that distinguish dense formed connective tissue from dense unformed.	<u>Results of educational activities:</u> - they know the embryonic sources of connective tissue development, their classification; - - they know the structural features of connective tissue cells and fibers; - - they understand the morphological features that make it possible to distinguish dense formed connective tissue from dense unformed; - - they distinguish the structural components of various types of connective tissue on preparations.
Methods and means of training	Interactive method "Brainstorming", organizer "Cluster", tables, solving situational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, videos, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces you to the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening Clarify, ask questions
2-stage Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by students. 2.3. Sets out the interactive method scenario "Brainstorming." 2.4. Assesses students' knowledge of the interactive game "Brainstorming?": 1) the work of groups; 2) the work of individual participants. 2.5. Sets tasks for solving situational problems, evaluates their solution, 2.6. Test solutions; 2.7. Creating organizers and filling in tables;	They answer questions. They're listening. They're listening. They ask questions. They are made up of organizers. They decide and respond Make up an organizer Pass tasks on the SRS. They discuss and express their opinions.
Stage 3. Practical part (40 min)	3.1. Provides an explanation to students on the practical part of the lesson. 3.2. Shows slides on medications. 3.3. Shows short videos 3.4. Sets tasks for students to acquire skills in the practical part of the lesson. 3.5. Checks the results of practical work.	They're listening. They ask questions. Understand what you need to pay attention to when viewing микропре- microscopes under a microscope They look at micro-preparations under a microscope on their own and sketch them in their albums. Present the results of their work.
Stage 4. Conclude it- Final part (10 min)	4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal. 4.2. Assesses the degree of students' knowledge on the theoretical and practical part of the lesson, announces grades to students. 4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.	They're listening Listening Recording

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in пределах the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" is unsatisfactory	The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Cannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#9/10. Topic: **CARTILAGE AND BONE TISSUE.** Training model

Time: 120 min.	Number of students: 14
Class location	Study room of the Department of Histology
Structure of the training session	1.Introduction 2.The theoretical part. 3.The practical part.
The purpose of the lesson: - to study the microscopic and ultramicroscopic structure, histophysiology and interaction of structural components of cartilage and bone tissues.	
The student should know: - general characteristics and classification of cartilage and bone tissue; - sources of development of cartilage and bone tissue; - localization and principles of the structure of cartilage and bone tissue; - age-related changes in cartilage and bone tissue; - regeneration of cartilage and bone tissue.	
The student should be able to : - distinguish the structural components of cartilage and bone tissue at the microscopic and ultramicroscopic levels.	
Teacher's tasks: - test	Results of educational activities: - they know the embryonic sources of development of cartilage and bone tissue, their classification;

<p>students ' theoretical knowledge on this topic;</p> <ul style="list-style-type: none"> - explain the features of the structure of cartilage and bone tissue cells and teach them to identify them on histological preparations; - point out the distinctive features in the structure of various types of cartilage tissue; - understand the morphological features that distinguish lamellar from reticulofibrous tissue; - teach them to identify cartilage and bone tissue on micro-preparations. 	<ul style="list-style-type: none"> - - they know the features of the structure of cells and intercellular substance of cartilage and bone tissue; - - they understand the morphological features that make it possible to distinguish lamellar from reticulofibrous; - they distinguish the structural components of various types of cartilage and bone tissue on preparations.
Methods and training	Interactive method "Brainstorming", organizer "Cluster", tables, solving situational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, videos, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces you to the lesson plan. 1.4. Introduces the criteria for evaluating students ' knowledge and skills.	Listen, record They're listening Clarify, ask questions
2-stage Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by students. 2.3. Sets out the interactive method scenario "Brainstorming". 2.4. Assesses students 'knowledge of the interactive game" Brainstorming?": 1) the work of groups; 2) the work of individual participants. 2.5. Sets tasks for solving situational problems, evaluates their solution, 2.6. Test solutions; 2.7. Creating organizers and filling in tables;	They answer questions. They're listening. They're listening. They ask questions. They are made up of organizers. They decide and respond Make up an organizer Pass tasks on the SRS. They discuss and express their opinions.

<p>Stage 3. Practical part (40 min)</p>	<p>3.1. Provides an explanation to students on the practical part of the lesson. 3.2. Shows slides on medications. 3.3 Shows short videos</p> <p>3.4. Sets tasks for students to acquire skills in the practical part of the lesson.</p> <p>3.5. Checks the results of practical work.</p>	<p>They're listening. They ask questions. Understand what you need to pay attention to when viewing микропрепаратов under a microscope They look at micro-preparations under a microscope on their own and sketch them in their albums. Present the results of their work.</p>
<p>Stage 4. Conclude it- Final part (10 min)</p>	<p>4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal. 4.2. Assesses the degree of students' knowledge on the theoretical and practical part of the lesson, announces grades to students. 4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.</p>	<p>They're listening</p> <p>Listening</p> <p>Recording</p>

Criteria for evaluating current control

Rating	Degree of knowledge of the student
<p>"5" excellent</p>	<p>The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.</p>
<p>"4" is good</p>	<p>Student's answer on the topic in пределах the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.</p>
<p>"3" is satisfactory</p>	<p>The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.</p>
<p>"2" is unsatisfactory</p>	<p>The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Cannot solve operational problems. Doesn't perform any tasks on the topic during the session</p>

**Lesson#11. Topic:MUSCLE TISSUE.
Training model**

Time: 120 min.	Number of students: 14
Class location	Study room of the Department of Histology
Structure of the training session	1.Introduction 2.The theoretical part. 3.The practical part.
The purpose of the lesson: - to study the microscopic and ultramicroscopic structure, histophysiology and interaction of structural components of muscle tissue.	
The student should know: - general characteristics and classification of muscle tissue; - sources of muscle tissue development; - localization and principles of muscle tissue structure; - age-related changes in muscle tissue; - regeneration of muscle tissue.	
The student should be able to : - distinguish the structural components of muscle tissue at the microscopic and ultramicroscopic levels.	
Teacher's tasks: - check the theoretical knowledge of students on the subject; - to explain about the features of the structure of the structural components of muscle tissue and to teach them to identify their histological specimens; - to point out the distinctive features in the structure of different types of muscle tissue; - to understand the morphological features that distinguish smooth, striated and cardiac muscle tissue from each other; - to learn to identify different types of muscle tissue on the microscope slide.	Results of training activities: - they know the embryonic sources of muscle tissue development, their classification; - they know the structural features of various types of muscle tissue; - they understand the morphological features that allow them to distinguish smooth, striated and cardiac muscle tissue from each other; - they distinguish the structural components of various types of cartilage and bone tissue on preparations.
Methods and training	Interactive method "Brainstorming", organizer "Cluster", tables, solving situational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, videos, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces you to the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening Clarify, ask questions
2-stage Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by students. 2.3. Sets out the interactive method scenario "Brainstorming." 2.4. Assesses students' knowledge of the interactive game "Brainstorming?": 1) the work of groups; 2) the work of individual participants. 2.5. Sets tasks for solving situational problems, evaluates their solution, 2.6. Test solutions; 2.7. Creating organizers and filling in tables;	They answer questions. They're listening. They're listening. They ask questions. They are made up of organizers. They decide and respond Make up an organizer Pass tasks on the SRS. They discuss and express their opinions.
Stage 3. Practical part (40 min)	3.1. Provides an explanation to students on the practical part of the lesson. 3.2. Shows slides on medications. 3.3. Shows short videos 3.4. Sets tasks for students to acquire skills in the practical part of the lesson. 3.5. Checks the results of practical work.	They're listening. They ask questions. Understand what you need to pay attention to when viewing микропре- microscopes under a microscope They look at micro-preparations under a microscope on their own and sketch them in their albums. Present the results of their work.
Stage 4. Conclude it- Final part (10 min)	4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal. 4.2. Assesses the degree of students' knowledge on the theoretical and practical part of the lesson, announces grades to students. 4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.	They're listening Listening Recording

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in the limits of the program. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" is unsatisfactory	The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Cannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#12. Topic: NERVE TISSUE. NEURONS AND NEUROGLIA Training model

Time: 120 min.	Number of students: 14
Class location	Study room of the Department of Histology
Structure of the training session	1.Introduction 2.The theoretical part. 3.The practical part.
The purpose of the lesson: - to study the microscopic and ultramicroscopic structure, histophysiology and interaction of structural components of nervous tissue.	
The student should know: - general characteristics and classification of nervous tissue; - sources of development of nervous tissue; - localization and principles of the structure of nervous tissue; - age-related changes in nervous tissue; - regeneration of nervous tissue.	
The student should be able to : - distinguish between the structural components of nervous tissue at the microscopic and ultramicroscopic levels of the nervous tissue.	

<p>Teacher's tasks:</p> <ul style="list-style-type: none"> - test students' theoretical knowledge on this topic; - explain the structural features of the structural components of the nervous tissue and teach them to identify them on histological preparations; - point out the distinctive features in the structure of various types of nervous tissue; understand the morphological features that allow you to distinguish different types of neurons and neuroglia from each other; - teach them to identify them on micro-preparations. 	<p>Results of educational activities:</p> <ul style="list-style-type: none"> - they know the embryonic sources of development of nervous tissue, their classification; - they know the structural features of various types of nervous tissue; - they understand morphological features that allow them to distinguish different types of neurons and neuroglia from each other; - they distinguish the structural components of nervous tissue on preparations
Methods and training	Interactive method "Brainstorming", organizer "Cluster", tables, solving situational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, videos, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Этапы Work stages and time (120 min)	Activities	
	training	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces you to the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening Clarify, ask questions
2-stage Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by students. 2.3. Sets out the interactive method scenario "Brainstorming". 2.4. Assesses students' knowledge of the interactive game "Brainstorming?": 1) the work of groups; 2) the work of individual participants. 2.5. Sets tasks for solving situational problems, evaluates their solution,	They answer questions. They're listening. They're listening. They ask questions. They are made up of organizers. They decide and respond Make up an organizer

	2.6 Test solutions; 2.7 Creating organizers and filling in tables;	Pass tasks on the SRS. They discuss and express their opinions.
Stage 3. Practical part (40 min)	3.1. Provides an explanation to students on the practical part of the lesson. 3.2. Shows slides on medications. 3.3 Shows short videos 3.4. Sets tasks for students to acquire skills in the practical part of the lesson. 3.5. Checks the results of practical work.	They're listening. They ask questions. Understand what you need to pay attention to when viewing микропре- microscopes under a microscope They look at micro-preparations under a microscope on their own and sketch them in their albums. Present the results of their work.
Stage 4. Conclude it- Final part (10 min)	4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal. 4.2. Assesses the degree of students' knowledge on the theoretical and practical part of the lesson, announces grades to students. 4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.	They're listening Listening Recording

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in пределах the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving

	situational problems. Passively participates in interactive games, and only answers some questions correctly.
" 2" is unsatisfactory	The student's answer on the topic is withinax 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Ccannot solve operational problems. Doesn't perform any tasks on the topic during the session

**Lesson#13. Topic: CARDIOVASCULAR SYSTEM
ARTERIES AND MICROCIRCULATORY BED.**

Training model

Time: 120 min.	Number of students: 14
Class location	Study room of the Department of Histology
Structure of the training session	1.Introduction 2.The theoretical part. 3.The practical part.
The purpose of the lesson: - to study the general principle of the interdependence of the structure of the vessel wall and hemodynamics; - to identify different types of arteries and vessels of the microcirculatory bed; - to characterize the organ-specific nature of blood vessels and their age-related changes.	
The student should know: - general characteristics and classification of arteries; - sources of development of blood and lymphatic vessels; - localization and principles of structure of various types of arteries and vessels of the microcirculatorybed; - age-related changes in the arterial wall; - vascular regeneration.	
The student should be able to : - distinguish between arteries, arterioles, capillaries and venules at the microscopic and ultramicroscopic level.	
Teacher's tasks: - test students ' theoretical knowledge on this topic; - explain the structural features of the structural components of the wall of various types of arteries and teach them to identify them on histological preparations; - point out the distinctive features in the structure of arterioles, capillaries and venules; - teach them to identify various types of arteries and	Results of educational activities: - they know the embryonic sources of vascular development, their classification; - they know the structural features of various types of arteries; - they understand the morphological features that make it possible to distinguish different types of arteries from each other; they can identify arteries, arterioles, capillaries and venules on micro - preparations.

microcirculatory vessels on micro-preparations.	
Methods and training	Interactive method "Brainstorming", organizer "Cluster", tables, solving situational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, videos, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces you to the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening Clarify, ask questions
2-stage Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by students. 2.3. Sets out the interactive method scenario "Brainstorming". 2.4. Assesses students' knowledge of the interactive game "Brainstorming?": 1) the work of groups; 2) the work of individual participants. 2.5. Sets tasks for solving situational problems, evaluates their solution, 2.6. Test solutions; 2.7. Drawing up organizers and filling out tables;	They answer questions. They're listening. They're listening. They ask questions. They are made up of organizers. They decide and respond Make up an organizer Pass tasks on the SRS. They discuss and express their opinions.
Stage 3. Practical part (40 min)	3.1. Provides an explanation to students on the practical part of the lesson. 3.2. Shows slides on medications. 3.3. Shows short videos 3.4. Sets tasks for students to acquire skills in the practical part of the lesson.	They're listening. They ask questions. Understand what you need to pay attention to when viewing микропре- microscopes

	3.5. Checks the results of practical work.	under a microscope They look at micro-preparations under a microscope on their own and sketch them in their albums. Present the results of their work.
Stage 4. Conclude it- Final part (10 min)	4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal. 4.2. Assesses the degree of students' knowledge on the theoretical and practical part of the lesson, announces grades to students. 4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.	They're listening Listening Recording

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" is unsatisfactory	The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Cannot solve operational problems. Doesn't perform any tasks on the topic during the session

**Lesson#14. Topic: CARDIOVASCULAR SYSTEM
THE VEINS. LYMPHATIC VESSELS. HEART
Training model**

Time: 120 min.	Number of students: 14
Class location	Study room of the Department of Histology
Structure of the training session	1.Introduction 2.The theoretical part. 3.The practical part.
The purpose of the lesson: - to study the micro - and ultramicroscopic structure of veins, lymphatic vessels and the heart.	
The student should know: - General characteristics and classification of veins and lymphatic vessels; to relate the structure of the walls of the veins, which are located in different parts of the human body, with the terms of hemodynamics; the most distinctive features of the structure of the vein to the artery ; - the structure of the wall of the heart; - age-related changes and regeneration of the walls of veins, lymphatic vessels and the heart.	
The student should be able to : - distinguish between veins, lymphatic vessels and the heart at microscopic and ultramicroscopic levels.	
Teacher's tasks: - test students' theoretical knowledge on this topic; - explain the structural features of the structural components of the wall of various types of veins and lymphatic vessels; - teach them to identify them on histological preparations; - point out the distinctive features in the structure of veins and arteries; - teach them to understand the micro - and ultrastructure of the endocardium, myocardium and epicardium on histological preparations.	Results of educational activities: - they know the classification, features of the structure of veins and lymphatic vessels; - they know the characteristic distinguishing features of the structure of a vein from an artery; - they understand morphological features that make it possible to identify all layers of the heart; they can identify different types of veins and the heart wall on micro - preparations.
Methods and means of training	Interactive method "Brainstorming", organizer "Cluster", tables, solving situational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, videos, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces you to the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening Clarify, ask questions
2-stage Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by students. 2.3. Sets out the interactive method scenario "Brainstorming." 2.4. Assesses students' knowledge of the interactive game "Brainstorming?": 1) the work of groups; 2) the work of individual participants. 2.5. Sets tasks for solving situational problems, evaluates their solution. 2.6. Test solutions. 2.7. Drawing up organizers and filling out tables;	They answer questions. They're listening. They're listening. They ask questions. They are made up of organizers. They decide and respond Make up an organizer Pass tasks on the SRS. They discuss and express their opinions.
Stage 3. Practical part (40 min)	3.1. Provides an explanation to students on the practical part of the lesson. 3.2. Shows slides on medications. 3.3. Shows short videos 3.4. Sets tasks for students to acquire skills in the practical part of the lesson. 3.5. Checks the results of practical work.	They're listening. They ask questions. Understand what you need to pay attention to when viewing микропре- microscopes under a microscope They look at micro-preparations under a microscope on their own and sketch them in their albums.

		Present the results of their work.
Stage 4. Conclude it- Final part (10 min)	4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal. 4.2. Assesses the degree of students' knowledge on the theoretical and practical part of the lesson, announces grades to students. 4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.	They're listening Listening Recording

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in пределах the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" is unsatisfactory	The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Cannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#15. Topic: CENTRAL ORGANS OF HEMATOPOIESIS AND IMMUNOLOGICAL PROTECTION

Training model

Time: 120 min.	Number of students: 14
Class location	Study room of the Department of Histology
Structure of the training session	1.Introduction 2.The theoretical part. 3.The practical part.
The purpose of the lesson: - to study the morphology and histophysiology of the central organs of hematopoiesis and immunological protection.	
The student should know: - general characteristics and classification of the centralhematopoietic organs; - sources of development of the central hematopoietic organs; - localization and principles of the structure of the hematopoietic organs and immunocytopoiesis: bone marrow and thymus; regeneration and age-related changes in the central hematopoietic organs.	
The student should be able to : - distinguish the structural components of the central hematopoietic organs at the microscopic and ultramicroscopic levels.	
<p>Teacher's tasks:</p> <ul style="list-style-type: none"> - test students ' theoretical knowledge on this topic; - explain the features of the structure of the red bone marrow and thymus; - teach them to identify them on histological preparations; - point out the distinctive features in the structure of the cortical and medullary substance of the thymus; - understand the morphological features that make it possible to distinguish the tissue of a healthy thymus and the thymus that has undergone accidental involution; - indicate the features of blood supply to the thymus. 	<p>The results of educational activities:</p> <ul style="list-style-type: none"> - know the embryonic development of the Central organs of hematopoiesis and their classification; - know the characteristics of the localization and the principles of the structure of these bodies; - have an idea about their role in hematopoiesis and immunocytopoiesis; - to understand the morphological characteristics that distinguish healthy tissue of the thymus and thymus subjected to accidental involution; - distinguish between products of structural components of the red bone marrow and thymus; - know about the features of the blood supply to the thymus.
Methods and reeds and training	Interactive method "Brainstorming", organizer "Cluster", tables, solving situational problems.
Forms of training	Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histologicale atlass, computer, microscopes, micro-preparations, videos, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" is unsatisfactory	The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Cannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#16. Subject: PERIPHERAL ORGANS OF HEMATOPOIESIS AND IMMUNOLOGICAL PROTECTION

Training model

Time: 120 min.	Number of students: 14
Class location	Study room of the Department of Histology
Structure of the training session	1.Introduction 2.The theoretical part. 3.The practical part.
The purpose of the lesson: - to study the morphology and histophysiology of peripheral hematopoietic organs and immunological protection.	
The student should know: - general characteristics and classification of peripheral hematopoietic organs; - sources of development of peripheral hematopoietic organs; - localization and principles of the structure of lymphopoiesis and immunocytopoiesis organs: lymph nodes, Peyer's plaques and spleen. Learn to distinguish between the T - and B-zones of these organs and imagine their role in the immune response;	

<ul style="list-style-type: none"> - age-related changes; - regeneration of peripheral hematopoietic organs. 	
<p>The student should be able to :</p> <ul style="list-style-type: none"> - distinguish the structural components of peripheral hematopoietic organs at the microscopic and ultramicroscopic levels. 	
<p>Teacher's tasks:</p> <ul style="list-style-type: none"> - check the theoretical knowledge of students on the subject; - to explain about the features of the structure of the spleen, Peyer's patches and lymph node; - learn to identify them on histologic specimens; - to indicate distinctive features in the structure of the lymphatic and gemolimfaticesky nodes; - to understand the morphological features that distinguish T and b - zone peripheral organs of hematopoiesis; - to point out the features of the blood supply of the spleen. 	<p>The results of educational activities:</p> <ul style="list-style-type: none"> - know the embryonic development of the peripheral organs of hematopoiesis and their classification; - know the characteristics of the localization and the principles of the structure of these bodies; - have an idea about their role in lymphocytopoiesis and immunocytomas; - to understand the morphological characteristics that distinguish T and b - zone peripheral organs of hematopoiesis; - distinguish between products of structural components of the spleen, Peyer's patches and lymph node; - know about the features of the blood supply of the spleen.
Methods and training	Interactive method "Brainstorming", organizer "Cluster", tables, solving situational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histologicale atlas, computer, microscopes, micro-preparations, videos, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces you to the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening Clarify, ask questions
2-stage Theoretical part	2.1. Conducts a survey and determines the initial knowledge of students.	They answer questions.

(60 min)	<p>2.2. Explains questions, that are not fully understood by students.</p> <p>2.3. Sets out the interactive method scenario "Brainstorming."</p> <p>2.4 Assesses students 'knowledge of the interactive game" Brainstorming?": 1) the work of groups; 2) the work of individual participants.</p> <p>2.5. Sets tasks for solving situational problems, evaluates their solution,</p> <p>2.6 Test solutions;</p> <p>2.7 Creating organizers and filling in tables;</p>	<p>They're listening.</p> <p>They're listening. They ask questions.</p> <p>They are made up of organizers.</p> <p>They decide and respond</p> <p>Make up an organizer</p> <p>Pass tasks on the SRS.</p> <p>They discuss and express their opinions.</p>
<p>Stage 3.</p> <p>Practical part</p> <p>(40 min)</p>	<p>3.1. Provides an explanation to students on the practical part of the lesson.</p> <p>3.2. Shows slides on medications.</p> <p>3.3 Shows short videos</p> <p>3.4. Sets tasks for students to acquire skills in the practical part of the lesson.</p> <p>3.5. Checks the results of practical work.</p>	<p>They're listening. They ask questions.</p> <p>Understand what you need to pay attention to when viewing микропре- microscopes under a microscope</p> <p>They look at micro- preparations under a microscope on their own and sketch them in their albums.</p> <p>Present the results of their work.</p>
<p>Stage 4.</p> <p>Conclude it- Final part</p> <p>(10 min)</p>	<p>4.1. Gives a conclusion on the topic, draws students ' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal.</p> <p>4.2. Assesses the degree of students ' knowledge on the theoretical and practical part of the lesson, announces grades to students.</p> <p>4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.</p>	<p>They're listening</p> <p>Listening</p> <p>Recording</p>

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in пределах the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" is unsatisfactory	The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Cannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#17. Topic: CENTRAL ORGANS OF THE ENDOCRINE SYSTEM. Training model

Time: 120 min.	Number of students: 14
Class location	Study room of the Department of Histology
Structure of the training session	1.Introduction 2.The theoretical part. 3.The practical part.
The purpose of the lesson: - to study the morphology and histophysiology of the central organs of the endocrine system.	
The student should know: - general characteristics and classification of the central organs of the endocrine system; - sources of development of the central organs of the endocrine system; - localization and principles of the structure of the central organs of the endocrine system: hypothalamus, pituitary and epiphysis; regeneration and age-related changes in the central organs of the endocrine system.	
The student should be able to : - distinguish the structural components of the central organs of the endocrine system at the microscopic and ultramicroscopic levels of the endocrine system.	
Teacher's tasks: - check the theoretical knowledge of students on the subject;	The results of educational activities:

<ul style="list-style-type: none"> - to explain about the features of the structure of the hypothalamus, pituitary and pineal gland; - learn to identify them on histologic specimens; - to point out the distinctive features in the structure of the adeno - and neurohypophysis; - to understand the morphological features that distinguish endocrinocytes of the anterior pituitary from each other; - to point out the peculiarities of the blood supply to the pituitary gland; - to explain the relationship between the hypothalamic-adenohypophyseal and the hypothalamic-neurohypophyseal of sistemy. 	<ul style="list-style-type: none"> - know the embryonic development of the Central organs of the endocrine system; - know the characteristics of the localization and the principles of the structure of the Central organs of the endocrine system; - understand the role of the hypothalamus, pituitary and pineal gland in the regulation of the function of organs and tissues of the body; - to understand the morphological characteristics that distinguish the fabric of the adeno - and neurohypophysis; - distinguish between products of structural components of the pituitary gland; - know about the features of the blood supply of the pituitary gland; - know about the features of the relationship of the hypothalamic-adenohypophyseal and the hypothalamic-neurohypophyseal system.
Methods and training	Interactive method "Brainstorming", organizer "Cluster", tables, solving situational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, videos, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces you to the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening Clarify, ask questions
2-stage Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by students. 2.3. Sets out the interactive method scenario "Brainstorming." 2.4. Assesses students' knowledge of the interactive game "Brainstorming?": 1) the work of groups; 2) the work of individual participants.	They answer questions. They're listening. They're listening. They ask questions. They are made up of organizers.

	<p>2.5. Sets tasks for solving situational problems, evaluates their solution,</p> <p>2.6 Test solutions;</p> <p>2.7 Creating organizers and filling in tables;</p>	<p>They decide and respond</p> <p>Make up an organizer</p> <p>Pass tasks on the SRS.</p> <p>They discuss and express their opinions.</p>
<p>Stage 3. Practical part (40 min)</p>	<p>3.1. Provides an explanation to students on the practical part of the lesson.</p> <p>3.2. Shows slides on medications.</p> <p>3.3 Shows short videos</p> <p>3.4. Sets tasks for students to acquire skills in the practical part of the lesson.</p> <p>3.5. Checks the results of practical work.</p>	<p>They're listening.</p> <p>They ask questions.</p> <p>Understand what you need to pay attention to when viewing микропре- microscopes under a microscope</p> <p>They look at micro- preparations under a microscope on their own and sketch them in their albums.</p> <p>Present the results of their work.</p>
<p>Stage 4. Conclude it- Final part (10 min)</p>	<p>4.1. Gives a conclusion on the topic, draws students ' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal.</p> <p>4.2. Assesses the degree of students ' knowledge on the theoretical and practical part of the lesson, announces grades to students.</p> <p>4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.</p>	<p>They're listening</p> <p>Listening</p> <p>Recording</p>

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	<p>The student's answer on the topic of the lesson is complete, the amount of knowledge within the limitsax of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Csolves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.</p>

"4" is good	Student's answer on the topic in пределах the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" is unsatisfactory	The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Cannot solve operational problems. Doesn't perform any tasks on the topic during the session

**Lesson#18. Topic: PERIPHERAL ORGANS OF THE ENDOCRINE SYSTEM.
Training model**

Time: 120 min.	Number of students: 14
Class location	Study room of the Department of Histology
Structure of the training session	1.Introduction 2.The theoretical part. 3.The practical part.
The purpose of the lesson: - to study the morphology and histophysiology of the central organs of the endocrine system.	
The student should know: - general characteristics and classification of the central organs of the endocrine system; - sources of development of the central organs of the endocrine system; - localization and principles of the structure of the central organs of the endocrine system: hypothalamus, pituitary and epiphysis; regeneration and age-related changes in the central organs of the endocrine system.	
The student should be able to : - distinguish the structural components of the central organs of the endocrine system at the microscopic and ultramicroscopic levels of the endocrine system.	
Teacher's tasks: - check the theoretical knowledge of students on the subject; - to explain about the features of the structure of the hypothalamus, pituitary and pineal gland; - learn to identify them on histologic specimens; - to point out the distinctive features in the structure of the adeno - and neurohypophysis; - to understand the morphological features that distinguish	The results of educational activities: - know the embryonic development of the Central organs of the endocrine system; - know the characteristics of the localization and the principles of the structure of the Central organs of the endocrine system; - understand the role of the hypothalamus, pituitary and pineal gland in the regulation of the function of organs and tissues of the body; - to understand the morphological characteristics that distinguish the fabric of the adeno - and neurohypophysis;

<p>endocrinocytes of the anterior pituitary from each other;</p> <ul style="list-style-type: none"> - to point out the peculiarities of the blood supply to the pituitary gland; - to explain the relationship between the hypothalamic-adenohypophyseal and the hypothalamic-neurohypophyseal of sistemy. 	<ul style="list-style-type: none"> - distinguish between products of structural components of the pituitary gland; - know about the features of the blood supply of the pituitary gland; - know about the features of the relationship of the hypothalamic-adenohypophyseal and the hypothalamic-neurohypophyseal system.
Methods and training	Interactive method "Brainstorming", organizer "Cluster", tables, solving situational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, videos, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces you to the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening Clarify, ask questions
2-stage Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by students. 2.3. Sets out the interactive method scenario "Brainstorming." 2.4. Assesses students' knowledge of the interactive game "Brainstorming?": 1) the work of groups; 2) the work of individual participants. 2.5. Sets tasks for solving situational problems, evaluates their solution. 2.6. Test solutions. 2.7. Drawing up organizers and filling out tables;	They answer questions. They're listening. They're listening. They ask questions. They are made up of organizers. They decide and respond Make up an organizer Pass tasks on the SRS. They discuss and express their opinions.
Stage 3. Practical part (40 min)	3.1. Provides an explanation to students on the practical part of the lesson. 3.2. Shows slides on medications. 3.3. Demonstrates short videos 3.4. Sets tasks for students to acquire skills in the practical part of the lesson.	They're listening. They ask questions. Understand what you need to pay attention to when viewing микропре- microscopes under a microscope They look at micro-preparations under a microscope on their own

	3.5. Checks the results of practical work.	and sketch them in their albums. Present the results of their work.
Stage 4. Conclude it- Final part (10 min)	4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal. 4.2. Assesses the degree of students' knowledge on the theoretical and practical part of the lesson, announces grades to students. 4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.	They're listening Listening Recording

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" is unsatisfactory	The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Cannot solve operational problems. Doesn't perform any tasks on the topic during the session

CALENDAR AND THEMATIC PLAN

for the 2020-2021 academic year

Department: Pathological Physiology, Histology

Subject: Histology, Embryology, Cytology

Faculty: I-II Pediatrics, Medical, Medical-pedagogical, Medical-biological

Course: II, semester: 3

Hours allocated per semester: lecture-18, practical lesson - 54

Distance learning sessions

№	Lesson topic	watch
1	Respiratory system. Skin and its derivatives.	2
2	The digestive system. Organs of the oral cavity. The esophagus.	2
3	The digestive system. Stomach. Small and large intestine.	2
4	The digestive system. Liver. The pancreas	2
5	Urinary system. The male reproductive system	2
6	Female reproductive system	2
7	Fundamentals of human embryology	2
8	The nervous system.	2
9	Sensory organs. The organ of vision. Organ of hearing and balance.	2
	in total	18

Practical exercises

№	Lesson topic	Watch
1	Skin and its derivatives.	3
2	Respiratory system.	3
3	The digestive system. The oral cavity. The structure of the tongue and its papillae. Structure of the salivary glands their classification	3
4	The digestive system. Tonsils and esophagus.	3
5	The digestive system. Stomach. Newborn's stomach	3
6	The digestive system. Thin and tcolon duodenum. Appendix vermiformis and rectum	3

7	The digestive system. Liver and gallbladder.	3
8	Digestive glands. The pancreas and its exocrine and endocrine parts.	3
9	Gistophysiology digestive system (Intermediate control -II)	3
10	Urinary system. The structure of the kidney. Nephron. Formation of urine. The bladder. Ureter, its structure	3
11	The male reproductive system. Testis, an appendage of the testis. Vas deferens, structure of the prostate gland	3
12	The female reproductive system. The ovary. The uterus is its structure. The uterus of a newborn. The mammary gland and its structure.	3
13	Fundamentals of human embryology. Germ cells.	3
14	Fundamentals of human embryology. Laboratory work: The period of embryonic development. Study of embryonic and pharmacological organs under a microscope	3
15	Nya Nerve the system. Spinal nodes. The spinal cord. The cerebellum.	3
16	The nervous system. The brain. The autonomic nervous system.	3
17	Senseorgans. Visual analyzer. The organ of smell	3
18	Sensory organs. Organs of hearing and balance	3
	in total	54

Lesson # 1. Topic: "Skin and its derivatives»

Training model

Time: 120 min.	Number of students: 14
1. Class location	Study room of the Department of Histology
2. Structure of the training session	<ol style="list-style-type: none"> 1. Introduction 2. Theoretical part: discussion of theoretical issues. 3. Practical part: study of histological preparations under a light microscope. 4. Assessment of knowledge 5. Teacher's conclusion
Lesson goal: to deepen knowledge about the microscopic and ultramicroscopic structure of the skin epidermis, as well as its morphological differences in "thick" and "thin" skin; knowledge of the structure of the reticular and papillary layers of the dermis and the influence of the papillary layer on the skin surface relief; to know the histological structure of skin epithelial derivatives: sweat and sebaceous glands, hair, nails; to form the ability to determine thick and thin skin on micro-preparations, its structural components and fabric composition.	
<u>Teacher's tasks:</u>	<u>Results of training activities:</u>
1) test your theoretical knowledge	The student should know:

<p>students about the sources of development, structure of the skin and its derivatives;</p> <p>2) explain on the slides the features of the structure of "thin" and "thick" skin, the process of keratinization.</p> <p>3) teach to distinguish skin layers, their tissue composition, glands, and structural components of the hair root on preparations under a microscope.</p>	<ul style="list-style-type: none"> - features of the structure and functions of the skin, its derived products; - tissue composition of the skin, features morphology of epidermal cells; - morphological and biochemical changes, occurring in keratinocytes in the process of their differentiations; - features of the micro - and ultrastructure of melanocytes and langerhans cells; - hair structure, morphology and histophysiology sebaceous and sweat glands. <p>The student must be able to:</p> <ul style="list-style-type: none"> - identify all skin layers on the preparations; - find and show the main structural features of the drug. components of the skin, see the features of the structure and differences between "thin" and "thick" skin; - find and show on the hair root sheath preparation, sweat and sebaceous glands; - describe and sketch the preparations.
<p>Methods and needs and training sessions</p>	<p>Cluster organizer, crossword puzzle, spreadsheets, situational solutions tasks.</p>
<p>Forms training sessions</p>	<p>Work collective and in groups, presentations.</p>
<p>Training equipment</p>	<p>Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscope, micro-preparations, videos, blackboard, chalk.</p>
<p>Monitoring and evaluation</p>	<p>Oral, written, group learning tasks, situational tasks, etc.</p>

Lesson flow chart

Work stages and time (120 min)	Activity	
	training center	trainee
1-stage Introduction (10 min)	<p>1.1. Checks traffic</p> <p>1.2. Names topics, explains the goal and expected results classes.</p> <p>1.3. Introduces you to the lesson plan.</p> <p>1.4. Introduces the criteria for evaluating students ' knowledge and skills.</p>	<p>Listen, record</p> <p>They're listening</p> <p>They clarify and ask questions</p>
Stage 2 Theoretical part (60 min)	<p>2.1. Conducts a survey and determines the initial knowledge of students.</p> <p>2.2. Explains the questions, not fully mastered by students, demonstrates short videos.</p> <p>2.3. Sets out the methodology for creating the "Cluster" organizer planned for the lesson. Evaluates it.</p> <p>2.4. Organizes the crossword puzzle solution.</p> <p>2.5. Gives tasks for solving situational problems, evaluates their solution.</p> <p>2.6. Evaluates the implementation of the SRS.</p>	<p>They answer questions.</p> <p>They're listening.</p> <p>They're listening. They ask questions, perform tasks for creating a cluster. They decide.</p> <p>They decide and respond</p> <p>Pass tasks on the SRS.</p> <p>They discuss and express their opinions.</p>

<p>Stage 3.</p> <p>Practical part</p> <p>(40 min)</p>	<p>3.1. Provides an explanation to students on the practical part of the lesson.</p> <p>3.2. Demonstrates slides on medications.</p> <p>3.3. Gives students tasks to acquire skills in the practical part of the lesson.</p> <p>3.4. Checks the results of practical work.</p>	<p>They're listening. They ask questions.</p> <p>Understand what you need to pay attention to during the viewing process micropreparatov under the microscope</p> <p>They look at micro-preparations under a microscope on their own and sketch them in their albums.</p> <p>Present the results of their own researcheth of work.</p>
<p>Stage 4.</p> <p>Conclude it-</p> <p>tel part</p> <p>(10 min)</p>	<p>4.1. Gives a conclusion on the topic, draws students ' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal.</p> <p>4.2. assesses the degree of students ' knowledge of the theoretical and practical part of the lesson, announces grades to students.</p> <p>4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.</p>	<p>They're listening</p> <p>They're listening</p> <p>They record it</p>

Criteria for evaluating current control

Evaluation	Degree of student knowledge
"5" is excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the

	program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Csolves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" udov- letvo- preferably	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" failures- letvo- preferably	The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Ccannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#2. Topic: RESPIRATORY SYSTEM ORGANS.

Training model

Time: 120 min.	Number of students: 14
Class location	Study room of the Department of Histology
Structure of the training session	6. 1. Introduction 7. 2. The theoretical part. 3. Practical part.
The purpose of the lesson: - to study the microscopic and ultramicroscopic structure of the respiratory system organs and the histophysiology of their structural components.	
The student should know: <ul style="list-style-type: none"> • features of the structure of various sections of airways ; • cellular composition of the epithelium of the mucous membrane of the airways and features of the ultrastructure of each cell; • structure of pulmonary acinus; • ultrastructure of respiratory and large alveolocytes and macrophages of the lungs. 	
The student must be able to:	

<ul style="list-style-type: none"> distinguish between large, medium and small-caliber bronchi and acinus on micro-preparations of the lung; distinguish between the structural elements of the trachea on tracheal preparations. 	
<p><u>Teacher's tasks:</u></p> <ul style="list-style-type: none"> - test your theoretical knowledge students on this topic; - generalize and systematize knowledge about the structure and function of the respiratory system; - generalize and deepen knowledge about the respiratory department of the lung; - explain medications using a computer. 	<p><u>Results of training activities:</u></p> <ul style="list-style-type: none"> - knows features of the structure of various sections of airways - characterizes the cellular composition of the epithelium of the mucous membrane of the airways and the features of the ultrastructure of each cell; - knows the structure of pulmonary acinus; <p>- knows the ultrastructure of respiratory and large alveolocytes and macrophages of the lungs.</p>
Methods and training sessions	Interactive method "Web", organizer "Cluster", tables, solving situational problems tasks.
Forms training sessions	Work collective and in groups, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscope, micro-preparations, videos, blackboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activity	
	training center	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names topics, explains the goal and expected results classes. 1.3. Introduces you to the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening They clarify and ask questions

<p>Stage 2</p> <p>Theoretical part</p> <p>(60 min)</p>	<p>2.1. Conducts a survey and determines the initial knowledge of students.</p> <p>2.2. Explains the questions, not fully understood by students.</p> <p>2.3. Sets out the interactive method scenario "Web".</p> <p>2.4. Sets tasks for solving situational problems and evaluates their solution,</p> <p>2.5. Test solutions;</p> <p>2.6. Creating organizers and filling in tables;</p>	<p>They answer questions.</p> <p>They're listening.</p> <p>They're listening. They ask questions. They are made up of organizers.</p> <p>They decide and respond</p> <p>Make up an organizer</p> <p>Pass tasks on the SRS.</p> <p>They discuss and express their opinions.</p>
<p>Stage 3.</p> <p>Practical part</p> <p>(40 min)</p>	<p>3.1. Provides an explanation to students on the practical part of the lesson.</p> <p>3.2. Demonstrates slides on medications.</p> <p>3.3 Shows short videos</p> <p>3.4. Sets tasks for students to acquire skills in the practical part of the lesson.</p> <p>3.5. Checks the results of practical work.</p>	<p>They're listening. They ask questions.</p> <p>Understand what you need to pay attention to during the viewing process micropreparatov under the microscope</p> <p>They look at micro-preparations under a microscope on their own and sketch them in their albums.</p> <p>Present the results of their own researcheth of work.</p>

Lesson#3. Subject: DIGESTIVE SYSTEM: ORAL CAVITY

Training model

Time: 120 min.	Number of students: 14
1. Class location	Study room of the Department of Histology
2. Structure of the training session	<ol style="list-style-type: none"> 1. Introduction 2. Theoretical part: discussion of theoretical issues. 3. Practical part: study of histological preparations under a light microscope. 4. Assessment of knowledge 5. Teacher's conclusion
<p>Lesson goal:</p> <ul style="list-style-type: none"> - consolidate knowledge about the sources of development, features of the microscopic structure, etc. <p>functions of large salivary glands;</p> <ul style="list-style-type: none"> - to give a general idea of the features of the structure and histophysiology of lymphoid cells. <p>formations of the gastrointestinal tract.</p> <ul style="list-style-type: none"> - provide knowledge about the histogenesis, structure and histophysiology of the tonsils; - develop the ability to identify salivary glands and tonsils on the <p>micro-drugs, identify their structural elements;</p>	
<p><u>Teacher's tasks:</u></p> <p>1) test your theoretical knowledge</p> <p>students about the sources of development and structure of large salivary glands;</p> <p>2) deepen your knowledge of</p> <p>features of the structure of the tonsils and their importance in the immune system;</p> <p>3) explain and show on slides preparations of salivary glands, tonsils, teach to find the main structural elements and tissues on micro-preparations.</p>	<p><u>Results of training activities:</u></p> <p>The student should know:</p> <ul style="list-style-type: none"> - histogenesis, structure and functions of large salivary glands, their distinctive morphological features,; - morphology and histophysiology of the tonsils; <p>The student must be able to:</p> <ul style="list-style-type: none"> - identify the parotid and submandibular areas on micro-preparations of the salivary glands and tonsils., <p>hyoid gland, palatine tonsil;</p> <ul style="list-style-type: none"> - find and show the main structural components of the salivary glands and tonsils on the preparations; - describe and sketch the preparations.

Methods andreedsand training sessions	Creating a Venn Diagram organizer, solving situational problems tasks.
Forms training sessions	Work collective and in groups, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, videos, blackboard, chalk.
MONitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activity	
	training center	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Daet title of the topic, explains the goal and expected results classes. 1.3. Introduces you to the lesson plan. 1.4. Introduces the criteria for evaluating students ' knowledge and skills.	Listen, record They're listening They clarify and ask questions
Stage 2 Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains the questions, not fully mastered by students, demonstrates short videos. 2.3. Sets out the scenario of the interactive game planned for the lesson "The weak link" " 2.4. Based on an interactive game "Weak link"activates students' knowledge, gives a conclusion based on the results of mutual assessment. 2.5. Sets tasks for solving situational problems and evaluates them .	They answer questions. They're listening. They're listening. They ask questions. Answer questions

		<p>They decide and respond</p> <p>Pass tasks on the SRS.</p> <p>They discuss and express their opinions.</p>
<p>Stage 3.</p> <p>Practical part</p> <p>(40 min)</p>	<p>3.1. Provides an explanation to students on the practical part of the lesson.</p> <p>3.2. Demonstrates slides on medications..</p> <p>3.3. Sets tasks for students to acquire skills in the practical part of the lesson.</p> <p>3.4. Checks the results of practical work.</p>	<p>They're listening. They ask questions.</p> <p>Understand what you need to pay attention to during the viewing process micropreparatov under the microscope</p> <p>They look at micro-preparations under a microscope on their own and sketch them in their albums.</p> <p>Present the results of their own researcheth of work.</p>
<p>Stage 4.</p> <p>Conclude it-</p> <p>tel part</p> <p>(10 min)</p>	<p>4.1. Gives a conclusion on the topic, draws students ' attention to the importance of the work done in their future professional activities, analyzes the degree of achievement of the lesson goal.</p> <p>4.2. Assesses the degree of students ' knowledge on the theoretical and practical part of the lesson and announces grades to students.</p> <p>4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.</p>	<p>They're listening</p> <p>They're listening</p> <p>They record it</p>

Criteria for evaluating current control

Evaluation	Degree of student knowledge
"5" is excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Csolves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" udov- letvo- preferably	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" failures- letvo- preferably	The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Ccannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#4. Topic: DIGESTIVE SYSTEM: SALIVARY GLANDS, PHARYNX, TONSILS.

Training model

Time: 120 min.	Number of students: 14
1. Class location	Study room of the Department of Histology
2. Structure of the training session	<ol style="list-style-type: none"> 1. Introduction 2. Theoretical part: discussion of theoretical issues. 3. Practical part: study of histological preparations under a light microscope. 4. Assessment of knowledge 5. Teacher's conclusion
<p>Lesson goal:</p> <ul style="list-style-type: none"> - consolidate knowledge about the sources of development, features of the microscopic structure, etc. <p>functions of large salivary glands;</p> <ul style="list-style-type: none"> - to give a general idea of the features of the structure and histophysiology of lymphoid cells. <p>formations of the gastrointestinal tract.</p> <ul style="list-style-type: none"> - provide knowledge about the histogenesis, structure and histophysiology of the tonsils; - develop the ability to identify salivary glands and tonsils on the <p>micro-drugs, identify their structural elements;</p>	
<p><u>Teacher's tasks:</u></p> <p>1) test your theoretical knowledge</p> <p>students about the sources of development and structure of large salivary glands;</p> <p>2) deepen your knowledge of</p> <p>features of the structure of the tonsils and their importance in the immune system;</p> <p>3) explain and show on slides preparations of salivary glands, tonsils, teach to find the main structural elements and tissues on micro-preparations.</p>	<p><u>Results of training activities:</u></p> <p>The student should know:</p> <ul style="list-style-type: none"> - histogenesis, structure and functions of large salivary glands, their distinctive morphological features,; - morphology and histophysiology of the tonsils; <p>The student must be able to:</p> <ul style="list-style-type: none"> - identify the parotid and submandibular areas on micro-preparations of the salivary glands and tonsils., <p>hyoid gland, palatine tonsil;</p> <ul style="list-style-type: none"> - find and show the main structural components of the salivary glands and tonsils on the preparations; - describe and sketch the preparations.

Methods and training sessions	Creating a Venn Diagram organizer, solving situational problems tasks.
Forms training sessions	Work collective and in groups, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, videos, blackboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activity	
	training center	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Daet title of the topic, explains the goal and expected results classes. 1.3. Introduces you to the lesson plan. 1.4. Introduces the criteria for evaluating students ' knowledge and skills.	Listen, record They're listening They clarify and ask questions
Stage 2 Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains the questions, not fully mastered by students, demonstrates short videos. 2.3. Explains the principle of creating the "Venn Diagram" organizer, activates students ' knowledge, and gives a conclusion based on the results of an overall assessment. 2.4. Sets tasks for solving situational problems and evaluates them .	They answer questions. They're listening. They're listening. They ask questions. Answer questions Create a diagram. They decide and respond

		<p>They pass tasks for independent work.</p> <p>They discuss and express their opinions.</p>
<p>Stage 3.</p> <p>Practical part</p> <p>(40 min)</p>	<p>3.1. Provides an explanation to students on the practical part of the lesson.</p> <p>3.2. Demonstrates slides on medications..</p> <p>3.3. Sets tasks for students to acquire skills in the practical part of the lesson.</p> <p>3.4. Checks the results of practical work.</p>	<p>They're listening. They ask questions.</p> <p>Understand what you need to pay attention to during the viewing process micropreparatov under the microscope</p> <p>They look at micro-preparations under a microscope on their own and sketch them in their albums.</p> <p>Present the results of their own researcheth of work.</p>
<p>Stage 4.</p> <p>Conclude it- tel part</p> <p>(10 min)</p>	<p>4.1. Gives a conclusion on the topic, draws students ' attention to the importance of the work done in their future professional activities, analyzes the degree of achievement of the lesson goal.</p> <p>4.2. Assesses the degree of students ' knowledge on the theoretical and practical part of the lesson and announces grades to students.</p> <p>4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.</p>	<p>They're listening</p> <p>They're listening</p> <p>They record it</p>

Criteria for evaluating current control

Evaluation	Degree of student knowledge
"5" is excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. C solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" udov- letvo- preferably	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" failures- letvo- preferably	The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. C cannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#5. Subject: **DIGESTIVE SYSTEM: ESOPHAGUS, STOMACH.**

Training model

Time: 120 min.	Number of students: 14
1. Class location	Study room of the Department of Gynaecology and
2. Structure of the training session	31. Introduction 32. Theoretical part: discussion of theoretical issues. 33. Practical part: study of histological preparations under a light microscope. 34. Assessment of knowledge 35. Teacher's conclusion
Purpose of the lesson: to know the histogenesis, structure and functions of the esophagus and stomach, to be able to identify these organs and their tissue and cellular components on micro-preparations; get an idea of age-related changes and regeneration of the esophagus and stomach.	

<p><u>Tasks of the teacher:</u></p> <p>1) to test theoretical knowledge students about histogenesis and the structure of the esophagus and stomach;</p> <p>2) to deepen knowledge about the histophysiology of the gastric glands, endocrine cells of the esophagus and stomach;</p> <p>3) to explain on slides preparations of the esophagus and stomach;</p> <p>4) teach to find on the micro-preparations are the main ones structural elements, fabrics.</p>	<p><u>Learning outcomes:</u></p> <p>The student should know:</p> <ul style="list-style-type: none"> - the sources of development of the esophagus and stomach; - features of the structure of the esophageal wall; - morphological changes during the transition of the esophagus in the stomach; - the structural features of cardiac, fundalini and pyloric part of the stomach; - cellular composition of the gastric glands; endocrine cells of the esophagus and stomach; - localization of the autonomic nerve plexus in the wall of the esophagus and stomach. <p>The student should be able to :</p> <ul style="list-style-type: none"> - identify the esophagus and stomach on micro-preparations, explain their distinctive features; - find and show the main structural elements of the esophagus and stomach walls; - identify various parts of the stomach, identify the main cells of the stomach glands on micro - preparations and electronograms; - describe and sketch preparations of the esophagus and stomach.
<p>Methods and means of training</p>	<p>Interactive game “Bee swarm”, tables, filling in cluster A, solving situational problems.</p>
<p>Forms of training</p>	<p>Работа Collective and group work, presentations.</p>
<p>Training equipment</p>	<p>Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micropreparations, videofilms, whiteboard, chalk.</p>
<p>Monitoring and evaluation</p>	<p>Oral, written, group learning tasks, situational tasks, etc.</p>

2. Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee
<p>1-stage Introduction (10 min)</p>	<p>1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.</p>	<p>Listen, record They're listening Clarify, ask questions</p>
<p>2-stage Theoretical part (60 min)</p>	<p>2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by the students, demonstrates short videos.</p>	<p>They answer questions. They're listening.</p>

	<p>2.3. Sets out the scenario на of the interactive game planned for the lesson “Bee swarm”, a method for creating a cluster..</p> <p>2.4. Based on an interactive game “Bee Swarm"activates students' knowledge, gives a conclusion based on the results of mutual assessment.</p> <p>2.5. Sets tasks for solving situational problems and evaluates them.</p> <p>2.6. Evaluates the results of the SRS.</p>	<p>They're listening. They ask questions. Answer questions, They make up a cluster.</p> <p>They decide and respond</p> <p>Pass tasks on the SRS. They discuss and express their opinions.</p>
<p>3-Stage 3. Practical part (40 min)</p>	<p>3.1. Gives students an explanation of the practical part of the lesson.</p> <p>3.2. Shows slides on medications.</p> <p>3.3. Sets tasks for students to acquire skills in the practical part of the lesson.</p> <p>3.4. Checks the results of practical work.</p>	<p>They're listening. They ask questions. Understand what you need to pay attention to when viewing микропре- microscopes under a microscope They look at micro-preparations under a microscope on their own and sketch them in their albums. Present the results of their work.</p>
<p>4-Stage 4. Conclude it- Final part (10 min)</p>	<p>4.1. Gives a conclusion on the topic, draws students ' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal.</p> <p>4.2. assesses the degree of students ' knowledge on the theoretical and practical part of the lesson andSRS, announces grades to students.</p> <p>4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.</p>	<p>They're listening</p> <p>Listening</p> <p>Recording</p>

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limitsax of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the

	program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Csolves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in пределах the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limitsax of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" is unsatisfactory	The student's answer on the topic is withinax 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Ccannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#6. Subject: **DIGESTIVE SYSTEM: INTESTINE.**

Training model

Time: 120 min.	Number of students: 14
1. Class location	Study room of the Department of Gynaecology and
2. Structure of the training session	36. Introduction 37. Theoretical part: discussion of theoretical issues. 38. Practical part: study of histological preparations under a light microscope. 39. Knowledge evaluation 40. Conclusion teacher
the aim of the lesson: - to give an idea about the structure of the intestine, to give knowledge of the histogenesis, structure research Institute and histophysiology of the intestine, to form the ability to determine the micropreparations different finishly guts and components of its walls, to form an idea about the features of the structure and functions of different sections of the intestine: duodenum, jejunum, ileum, colon, rectum, Appendix; giving a presentation on the role of the intestine in the immunogenesis, to inform its age-related changes.	
<u>Tasks of the teacher:</u> 1) to test theoretical knowledge students about histogenesis and structure of different departments 2) deepen your knowledge of histophysiology of thin skin	<u>Learning outcomes:</u> The student should know: - the structure and functions of various parts of the intestine; - its role in digestion, absorption and immunogenesis. The student must be able: - to the micro specimens under a microscope to identify the different sections of the intestine;

guts, give a comparative the 12-ring feature, jejunum and ileum; 3) explain on slides thin and thick skin preparations guts; 4) teach you how to find them on the map. micro-preparations are the main ones structural elements, fabrics.	- to identify the major structural components of the bowel wall, display them on the product; - - to explain what characteristics to distinguish the duodenum, jejunum, ileum, fat, intestine; - describe and sketch the drugs; - to identify electronograms basic cells of the intestinal epithelium;
Methods and training	Interactive game "Bee swarm", "Venn diagram", tables, solving situational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micropreparations, videofilms, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (180 min)	Activities	
	training	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening Clarify, ask questions
2-stage Theoretical part (80 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by the students, demonstrates short videos. 2.3. Sets out the scenario of the interactive game planned for the lesson "Bee swarm", a method for creating a Venn diagram. 2.4. Based on an interactive game "Bee Swarm" activates students' knowledge, gives a conclusion based on the results of mutual assessment. 2.5. Sets tasks for solving situational problems, evaluates their solution, and compiles organizers. 2.6. Evaluates the implementation of the SRS.	They answer questions. They're listening. They're listening. They ask questions. Answer questions They decide and respond Create a Venn diagram. Pass tasks on the SRS. Presentation of reports.

		They discuss and express their opinions.
3-Stage 3. Practical part (80 min)	<p>3.1. Gives students an explanation of the practical part of the lesson.</p> <p>3.2. Shows slides on medications.</p> <p>3.3. Sets tasks for students to acquire skills in the practical part of the lesson.</p> <p>3.4. Checks the results of practical work.</p>	<p>They're listening. They ask questions. Understand what you need to pay attention to when viewing микропре- microscopes under a microscope They look at micro- preparations under a microscope on their own and sketch them in their albums. Present the results of their work.</p>
4-Stage 4. Conclude it- Final part (10 min)	<p>4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal.</p> <p>4.2. assesses the degree of students' knowledge on the theoretical and practical part of the lesson and SRS, announces grades to students.</p> <p>4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.</p>	<p>They're listening</p> <p>Listening</p> <p>Recording</p>

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. C solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in пределах the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.

" 3" is satisfactory	The student's answer on the topic is within the limitsax of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
" 2" is unsatisfactory	The student's answer on the topic is withinax 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Ccannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#7, 8. Subject: **DIGESTIVE SYSTEM: LIVER, PANCREAS.**

Training model

Time: 120 min.	Number of students: 14
1. Class location	Study room of the Department of Histology
2. Structure of the training session	41. Introduction 42. Theoretical part: discussion of theoretical issues. 43. Practical part: study of histological preparations under a light microscope. 44. Knowledge evaluation 45. Conclusion teacher
<p>the aim of the lesson: to give an idea of the functions and features of blood circulation in the liver; generate knowledge about hepatic lobe, to have a view of the portal and slice acinose; to analyze the relationship between the structure and function of hepatocytes; to get an idea about the structure of the biliary tract, to the knowledge of the structure and function of the pancreas, its endocrine part, the types of endocrine cells; develop the ability to identify the micropreparations of the liver, pancreas and their structural components.</p>	
<p><u>Tasks of the teacher:</u></p> <ol style="list-style-type: none"> 1) to test theoretical knowledge students about histogenesis and the structure of the liver and pancreas; 2) form an idea of the structural and functional unit of the liver, link the structure and functions of the liver; 2) expand knowledge about the structure and function of the pancreas, deepen knowledge about its endocrine part 3) explain on slides liver and pancreatic preparations breast cancer; 4) teach you how to find on the micro-preparations are the main ones structural elements. 	<p><u>Learning outcomes:</u></p> <p>The student should know:</p> <ul style="list-style-type: none"> - the structure, development and functions of the liver; - the structure of the biliary tract; - the sources of pancreatic development, the structure of lobules; - structure, cellular composition of the endocrine part of the pancreas ; - types of excretory ducts and features of their structure. - age-related features of the liver and pancreas. <p>The student must be able:</p> <ul style="list-style-type: none"> - to the micro specimens under a microscope to determine the liver and pancreas; - to identify the major structural components of the liver: the triad and Central vein, hepatic records, display them on the product; - to find and show on drugs acini of the pancreas, the islets of Langerhans, excretory ducts;

	- describe and sketch the drugs; - to identify electronograms the hepatocytes, intracellular structures, acinar cells of the pancreas.
Methods and training	Organizers "Lotus Flower", "Cluster", tables, solving situational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, videos, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces you to the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening Clarify, ask questions
2-stage Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by students, demonstrates short videos. 2.3. Explains the method of creating the "Lotus Flower" and "Cluster" organizers planned for the lesson. 2.4. Sets tasks for solving situational problems, evaluates their solution, and compiles organizers. 2.5. Evaluates the implementation of the SRS.	They answer questions. They're listening. They're listening. They ask questions. They are made up of organizers. They decide and respond SRS presentation on the topic of the lesson. They discuss and express their opinions.
Stage 3. Practical part (40 min)	3.1. Provides an explanation to students on the practical part of the lesson. 3.2. Shows slides on medications. 3.3. Sets tasks for students to acquire skills in the practical part of the lesson.	They're listening. They ask questions. Understand what you need to pay attention to when viewing микропре-

	3.4. Checks the results of practical work.	microscopes under a microscope They look at micro-preparations under a microscope on their own and sketch them in their albums. Present the results of their work.
Stage 4. Conclude it- Final part (10 min)	4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal. 4.2. Assesses the degree of students' knowledge on the theoretical and practical part of the lesson, announces grades to students. 4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.	They're listening Listening Recording

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" is unsatisfactory	The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Cannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#9. Subject: "URINARY SYSTEM".

Training model

Time: 120 min.	Number of students: 14
1. Class location	Study room of the Department of Gynaecology and
2. Structure of the training session	46. Introduction 47. Theoretical part: discussion of theoretical issues. 48. Practical part: study of histological preparations under a light microscope. 49. Assessment of knowledge 50. Teacher's conclusion
<p>The purpose of the lesson: to give an idea of the urinary tract, to give knowledge about the histogenesis, structure and histophysiology of the kidney, to give an idea of the histophysiology of the nephron, to give an idea of the endocrine function of the kidneys, the structure of the juxtaglomerular complex and its functional significance, to give knowledge about the structure and function of the collecting tubes, to give an idea of the features of blood supply to the kidneys.</p>	
<p><u>Tasks of the teacher:</u></p> <p>1) to test theoretical knowledge students' knowledge about the stages of kidney development, the structure of the cortical and medullary substance of the kidneys, the structure of the nephron; 2) to deepen students' knowledge about the histophysiology of the nephron, endocrine function of the kidneys. 3) explain on slides preparations of the kidney, bladder and ureter; 4) teach you to find on these sites: micro-preparations are the main ones structural elements.</p>	<p><u>Learning outcomes:</u></p> <p>The student should know:</p> <ul style="list-style-type: none"> - structure and functions of the kidneys - structure and functions of the nephron - structure and functions of the juxtaglomerular and prostaglandin apparatus - structural bases of filtration and reabsorption, - structure of the urinary tract <p>The student must be able:</p> <ul style="list-style-type: none"> - to the micro specimens under a microscope to determine the kidney; - to identify and show on the drug the boundary between the cortical and medullary substance of the brain rays, renal glomeruli, to learn to distinguish proximal and distal tubules, the thin part of the loop collective tube; - to identify and preparations of the ureter and bladder, to examine the tissue membranes of the walls; - describe and sketch the drugs; - to identify electronograms cells of the proximal and distal tubules, collecting ducts.
Methods and means of training	Interactive method "Bee swarm", organizer "Cluster", tables, solving situational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, videofilms, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee
1-stage Introduction (10 min)	<p>1.1. Checks traffic</p> <p>1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson.</p> <p>1.3. Introduces the lesson plan.</p> <p>1.4. Introduces the criteria for evaluating students' knowledge and skills.</p>	<p>Listen, record</p> <p>They're listening</p> <p>Clarify, ask questions</p>
2-stage Theoretical part (60 min)	<p>2.1. Conducts a survey and determines the initial knowledge of students.</p> <p>2.2. Explains questions, that are not fully understood by students, demonstrates short videos.</p> <p>2.3. Describes the scenario of the interactive method "Bee swarm", the method of creating the organizer "Cluster", запланированных planned for the lesson.</p> <p>2.4. Sets tasks for solving situational problems, evaluates their solution, and also compiles organizers.</p> <p>2.5. Evaluates the implementation of the SRS.</p>	<p>They answer questions.</p> <p>They're listening.</p> <p>They're listening.</p> <p>They ask questions. They are made up of organizers.</p> <p>They decide and respond</p> <p>Make up an organizer</p> <p>Pass tasks on the SRS.</p> <p>They discuss and express their opinions.</p>
3-Stage 3. Practical part (40 min)	<p>3.1. Gives students an explanation of the practical part of the lesson.</p> <p>3.2. Shows slides on medications.</p> <p>3.3. Sets tasks for students to acquire skills in the practical part of the lesson.</p> <p>3.4. Checks the results of practical work.</p>	<p>They're listening.</p> <p>They ask questions.</p> <p>Understand what you need to pay attention to when viewing микропре- microscopes under a microscope</p> <p>They look at micro-preparations under a microscope on their own and sketch them in their albums.</p>

		Present the results of their work.
4-Stage 4. Conclude it-Final part (10 min)	<p>4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal.</p> <p>4.2. Assesses the degree of students' knowledge on the theoretical and practical part of the lesson, announces grades to students.</p> <p>4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.</p>	<p>They're listening</p> <p>Listening</p> <p>Recording</p>

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in пределах the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" is unsatisfactory	The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Cannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#10. Topic: "MMale SEXUAL SYSTEM".

Training model

Time: 120 min.	Number of students: 14
1. Class location	Study room of the Department of Gynaecology and
2. Structure of the training session	51. Introduction 52. Theoretical part: discussion of theoretical issues. 53. Practical part: study of histological preparations under a light microscope. 54. Assessment of knowledge 55. Teacher's conclusion
<p>The aim of the lesson: to know the development, structure and histophysiology the testes, to the idea of generative and endocrine functions; know the features of the microscopic structure of the various divisions of the seminal tract; to know the microscopic structure of the prostate and seminal vesicles; to foster the ability to determine on the microscope slide. the organs of the male reproductive system, their structural components and tissue composition.</p>	
<p><u>The task of the teacher:</u></p> <ol style="list-style-type: none"> 1) to test the theoretical knowledge 2) Generalize and systematize knowledge about the structure and function of the testes. 3) Generalize and deepen knowledge about additional glands, features of the structure of the vas deferens. 4) explain medications using a computer. 5) teach to identify the organs of the male reproductive system under a microscope, to find the main structural elements on the preparations. 	<p><u>Learning outcomes:</u></p> <p>The student should know:</p> <ul style="list-style-type: none"> - the development of various departments of the male reproductive system. - microscopic structure of the testes and vas deferens. - on the prevalence of spermatogenesis and its differences from oogenesis. structural and functional features of additional sex glands: prostate, seminal vesicles, bulbourethral glands. <p>The student must be able to:</p> <ul style="list-style-type: none"> - on micro-preparations under a microscope to find and identify the structural components of the testis and different stages of spermatogenesis in the seminal cells. tubules; - identify different parts of the vas deferens, the prostate gland, see the features of their structure, find distinctive features for identification; show the main structures, - describe and sketch preparations, indicate all the main structures. - identify cells on electronograms Sertoli, to understand their relationship with spermatogenic cells, to identify interstitial cells, their characteristic features.
Methods and means of training	Interactive method "Bee swarm", organizer "Cluster", tables, solving situational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes,

	micro-preparations, videofilm s, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening Clarify, ask questions
2-stage Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by students, demonstrates short videos. 2.3. Describes the scenario of the interactive method "Bee swarm", the method of creating the organizer "Cluster", запланированных planned for the lesson. Evaluates them. 2.4. Sets tasks for solving situational problems and evaluates their solution. 2.5. Evaluates the implementation of the SRS.	They answer questions. They're listening. They're listening. They ask questions and perform tasks using the "Bee Swarm" method. Make up an organizer. They decide and respond Pass tasks on the SRS. They discuss and express their opinions.
3-Stage 3. Practical part (40 min)	3.1. Gives students an explanation of the practical part of the lesson. 3.2. Shows slides on medications. 3.3. Sets tasks for students to acquire skills in the practical part of the lesson. 3.4. Checks the results of practical work.	They're listening. They ask questions. Understand what you need to pay attention to when viewing микропре- microscopes under a microscope They look at micro-preparations under a microscope on their own and sketch them in their albums.

		Present the results of their work.
4-Stage 4. Conclude it-Final part (10 min)	<p>4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal.</p> <p>4.2. Assesses the degree of students' knowledge on the theoretical and practical part of the lesson, announces grades to students.</p> <p>4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.</p>	<p>They're listening</p> <p>Listening</p> <p>Recording</p>

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" is unsatisfactory	The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Cannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#12.Topic: "FEMALE REPRODUCTIVE SYSTEM".

Training model

Time: 120 min.	Number of students: 14
1. Class location	Study room of the Department of Gynaecology and

2. Structure of the training session	56. Introduction 57. Theoretical part: discussion of theoretical issues. 58. Practical part: study of histological preparations under a light microscope. 59. Assessment of knowledge 60. Teacher's conclusion
<p>The purpose of the lesson: to know the histogenesis, structure and functions of the ovaries, uterus, fallopian tubes and mammary glands; to get an idea of the cyclical reproductive and endocrine function of the ovaries, cyclic changes in the uterus and genital tract, to know the mechanisms of cyclic activity of the female reproductive system and their regulation. Be able to identify these organs and their structural components based on histological data.</p>	
<p><u>Tasks of the teacher:</u></p> 1) to test theoretical knowledge 2) Generalize and systematize knowledge about the structure and functions of the female reproductive system organs. 3) Generalize and deepen knowledge about the sexual cycle, the mechanism of cyclic activity of the organs of this system, and the regulation of the sexual cycle. 4) explain medications using a computer. 5) teach to identify the organs of the female reproductive system under a microscope, to find the main structural elements on the preparations.	<p><u>Learning outcomes:</u></p> <p>The student should know:</p> <ul style="list-style-type: none"> - histogenesis and histophysiology of the ovaries; - sexual cycle; - development and structure of the uterus, cyclic changes in it; - morphology of the fallopian tubes and vagina; - structure and functions of the mammary glands. - morphological signs that can be used to distinguish the ovary, uterus, fallopian tubes, and mammary glands on histological preparations. <p>The student must be able to:</p> <ul style="list-style-type: none"> - determine the ovary, uterus, fallopian tubes, and mammary gland on the micro-preparation, their main structures under a microscope, - identify tissue and cellular elements, and find distinctive features for identifying the studied organs. - determine the phase of the menstrual cycle according to the structure of the endometrium. - describe and sketch preparations, identify all the main structures. - identify the main intracellular elements of the oocyte, lactocyte, and interstitial cells on electronograms.
Methods and means of training	Interactive method "Bee swarm", organizer "Cluster", tables, solving situational problems.
Forms of training	Работы Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, videofilms, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee

<p>1-stage Introduction (10 min)</p>	<p>1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.</p>	<p>Listen, record They're listening Clarify, ask questions</p>
<p>2-stage Theoretical part (60 min)</p>	<p>2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by students, demonstrates short videos. 2.3. Describes the scenario of the interactive method "Bee swarm", the method of creating the organizer "Cluster", запланированных planned for the lesson. Evaluates them. 2.4. Gives tasks for solving situational problems, evaluates their solution. 2.5. Evaluates the implementation of the SRS.</p>	<p>They answer questions. They're listening. They're listening. They ask questions and perform tasks using the "Bee Swarm" method. Make up an organizer. They decide and respond Pass tasks on the SRS. They discuss and express their opinions.</p>
<p>3-Stage 3. Practical part (40 min)</p>	<p>3.1. Gives students an explanation of the practical part of the lesson. 3.2. Shows slides on medications. 3.3. Gives students tasks to acquire skills in the practical part of the lesson. 3.4. Checks the results of practical work.</p>	<p>They're listening. They ask questions. Understand what you need to pay attention to when viewing microscopes under a microscope. They look at micro-preparations under a microscope on their own and sketch them in their albums.</p>

		Present the results of their work.
4-Stage 4. Conclude it-Final part (10 min)	<p>4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal.</p> <p>4.2. Assesses the degree of students' knowledge on the theoretical and practical part of the lesson, announces grades to students.</p> <p>4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.</p>	<p>They're listening</p> <p>Listening</p> <p>Recording</p>

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in пределах the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" is unsatisfactory	The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Cannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#13.Topic: Aboutdreams of general embryology

TRAINING MODEL

Inremya: 120 min.	Number of students: 14	
MMES of the lesson	Study room of the Department of Gynaecology and	
Structure of the training session	1.Introduction 2.The theoretical part. 3.Practical part.	
The purpose of the lesson: to study the structure of male and female genital cells, the processes of fertilization, crushing, blastula formation, gastrulation.		
The student should know:		
<ul style="list-style-type: none"> - to have the concept of embryogenesis and its relationship with the ontogeny and phylogeny; - basics of Cytology: to have an idea about the nucleus, cytoplasm, the organelles and inclusions cells; - meiosis, its features and main stages; - the structure of the oocytes and their classification; - the structure of the sperm, spermatogenesis; - the mechanism and biological significance of the process of fertilization; - the types of crushing zygote; - the concept of gastrulation, the mechanisms of gastrulation. 		
The student should be able to :		
- distinguish between the female and male sex cells under a microscope.		
<u>Tasks of the teacher:</u>	<u>The results of educational activities:</u>	
<ul style="list-style-type: none"> - to test the theoretical knowledge of students on this topic; - to explain the features of the structure of male and female germ cells; - to explain the stages of fertilization and zygote formation; - to organize and systematize students' knowledge about various types of crushing and gastrulation; 	<ul style="list-style-type: none"> - have the concept of embryogenesis and its relationship with the ontogeny and phylogeny; - have an idea about the nucleus, cytoplasm, and organelles and cell inclusions; - know meiosis, its features and main stages; - know the structure and classification of the egg; - know the structure of the sperm, spermatogenesis; - explain the mechanism and biological significance of the process of fertilization; - know the types of crushing zygote; - have a notion of gastrulation and its mechanisms 	
Methods and means of training	Interactive method "Brainstorming", organizer "Cluster", tables, solving situational problems.	
Forms of training	Работа Collective and group work, presentations.	
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, videofilms, whiteboard, chalk.	
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.	

Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee

1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening Clarify, ask questions
2-stage Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by students, demonstrates short videos. 2.3. Sets out the scenario of the interactive method "Brainstorming"; 2.4. Sets tasks for solving situational problems. 2.5. Sets a task based on test solutions; 2.6. Evaluates the completion of tables and organizers..	They answer questions. They're listening. They're listening. They ask questions. They are made up of organizers. They decide and respond Make up an organizer Pass tasks on the SRS. They discuss and express their opinions.
3-Stage 3. Practical part (40 min)	3.1. Gives students an explanation of the practical part of the lesson. 3.2. Shows slides and videos on medications. 3.3. Sets tasks for students to acquire skills in the practical part of the lesson. 3.4. Checks the results of practical work.	They're listening. They ask questions. Understand what you need to pay attention to when viewing микроскопы- microscopes under a microscope They look at micro-preparations under a microscope on their own and sketch them in their albums. Present the results of their work.
4-Stage 4. Conclude it- Final part (10 min)	4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal. 4.2. Assesses the degree of students' knowledge on the theoretical and practical part of the lesson, announces grades to students. 4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.	They're listening Listening Recording

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in the limits of the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" is unsatisfactory	The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Cannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#14. Topic: About dreams of general embryology

TRAINING MODEL

Inremya: 120 min.	Number of students: 14
MMES of the lesson	Study room of the Department of Gynaecology and
Structure of the training session	1. Introduction 2. The theoretical part. 3. Practical part.
The purpose of the lesson: to study the structure of male and female genital cells, the processes of fertilization, crushing, blastula formation, gastrulation.	
The student should know: <ul style="list-style-type: none"> - to have the concept of embryogenesis and its relationship with the ontogeny and phylogeny; - basics of Cytology: to have an idea about the nucleus, cytoplasm, the organelles and inclusions cells; - meiosis, its features and main stages; - the structure of the oocytes and their classification; - the structure of the sperm, spermatogenesis; - the mechanism and biological significance of the process of fertilization; - the types of crushing zygote; - the concept of gastrulation, the mechanisms of gastrulation. 	
The student should be able to : <ul style="list-style-type: none"> - distinguish between the female and male sex cells under a microscope. 	

<u>Tasks of the teacher:</u>	<u>The results of educational activities:</u>
<ul style="list-style-type: none"> - to test the theoretical knowledge of students on this topic; - to explain the features of the structure of male and female germ cells; - to explain the stages of fertilization and zygote formation; - to organize and systematize students' knowledge about various types of cleavage and gastrulation; 	<ul style="list-style-type: none"> - have the concept of embryogenesis and its relationship with the ontogeny and phylogeny; - have an idea about the nucleus, cytoplasm, and organelles and cell inclusions; - know meiosis, its features and main stages; - know the structure and classification of the egg; - know the structure of the sperm, spermatogenesis; - explain the mechanism and biological significance of the process of fertilization; - know the types of cleavage zygote; - have a notion of gastrulation and its mechanisms
Methods and means of training	Interactive method "Brainstorming", organizer "Cluster", tables, solving situational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, videofilms, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening Clarify, ask questions
2-stage Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by students, demonstrates short videos. 2.3. Sets out the scenario of the interactive method "Brainstorming"; 2.4. Sets tasks for solving situational problems. 2.5. Sets a task based on test solutions; 2.6. Evaluates the completion of tables and organizers..	They answer questions. They're listening. They're listening. They ask questions. They are made up of organizers. They decide and respond Make up an organizer Pass tasks on the SRS.

		They discuss and express their opinions.
3-Stage 3. Practical part (40 min)	<p>3.1. Gives students an explanation of the practical part of the lesson.</p> <p>3.2. Shows slides and videos on medications.</p> <p>3.3. Sets tasks for students to acquire skills in the practical part of the lesson.</p> <p>3.4. Checks the results of practical work.</p>	They're listening. They ask questions. Understand what you need to pay attention to when viewing микропре- microscopes under a microscope They look at micro- preparations under a microscope on their own and sketch them in their albums. Present the results of their work.
4-Stage 4. Conclude it- Final part (10 min)	<p>4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal.</p> <p>4.2. Assesses the degree of students' knowledge on the theoretical and practical part of the lesson, announces grades to students.</p> <p>4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.</p>	They're listening Listening Recording

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and

	in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in пределах the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limitsax of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
"2" is unsatisfactory	The student's answer on the topic is withinax 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Ccannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#16.Subject: "The peripheral nervous system. The autonomic nervous system".

Training model

Inremya: 120 min.	Number of students: 14
MMES of the lesson	Study room of the Department ofGynaecologyand
Structure of the training session	1.Introduction 2.The theoretical part. 3.Practical part.
The purpose of the lesson: to study the structure of male and femalegenital cells, the processes of fertilization, crushing, blastula formation, gastrulation.	
The student should know: <ul style="list-style-type: none"> - to have the concept of embryogenesis and its relationship with the ontogeny and phylogeny; - basics of Cytology: to have an idea about the nucleus, cytoplasm, the organelles and inclusions cells; - meiosis, its features and main stages; - the structure of the oocytes and their classification; - the structure of the sperm, spermatogenesis; - the mechanism and biological significance of the process of fertilization; - the types of crushing zygote; - the concept of gastrulation, the mechanisms of gastrulation. 	
The student should be able to : <ul style="list-style-type: none"> - distinguish between the female and male sex cells under a microscope. 	
<u>Tasks of the teacher:</u> <ul style="list-style-type: none"> - to test the theoretical knowledge of students on this topic; - to explain the features of the structure of male and female germ cells; 	<u>The results of educational activities:</u> <ul style="list-style-type: none"> - have the concept of embryogenesis and its relationship with the ontogeny and phylogeny; - have an idea about the nucleus, cytoplasm, and organelles and cell inclusions; - know meiosis, its features and main stages; - know the structure and classification of the egg;

- to explain the stages of fertilization and zygote formation; - to organize and systematize students' knowledge about various types of crushing and gastrulation;	- know the structure of the sperm, spermatogenesis; - explain the mechanism and biological significance of the process of fertilization; - know the types of crushing zygote; - have a notion of gastrulation and its mechanisms
Methods and training	Interactive method "Brainstorming", organizer "Cluster", tables, solving situational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, videofilms, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening Clarify, ask questions
2-stage Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by the students, demonstrates short videos. 2.3. Sets out the scenario of the interactive "Bee swarm" method planned for the lesson. Evaluates it. 2.4. Gives tasks for solving situational problems, evaluates their solution. 2.5. Evaluates the implementation of the SRS.	They answer questions. They're listening. They're listening. They ask questions and perform tasks using the "Bee Swarm" method. They decide and respond Pass tasks on the SRS.

		They discuss and express their opinions.
3-Stage 3. Practical part (40 min)	3.1. Gives students an explanation of the practical part of the lesson. 3.2. Shows slides on medications. 3.3. Gives students tasks to acquire skills in the practical part of the lesson. 3.4. Checks the results of practical work.	They're listening. They ask questions. Understand what you need to pay attention to when viewing микропрепаратов under a microscope They look at micro-preparations under a microscope on their own and sketch them in their albums. Present the results of their work.
4-Stage 4. Conclude it- Final part (10 min)	4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal. 4.2. Assesses the degree of students' knowledge on the theoretical and practical part of the lesson, announces grades to students. 4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.	They're listening Listening Recording

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in пределах the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned

	lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
" 3" is satisfactory	The student's answer on the topic is within the limitsax of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
" 2" is unsatisfactory	The student's answer on the topic is withinax 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Ccannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#17.Topic:" ORGANS OF SIGHT AND SMELL»

Training model

Time: 120 min.	Number of students: 14
1. Class location	Study room of the Department of Gynaecology and
2. Structure of the training session	<ol style="list-style-type: none"> 1. Introduction 2. Theoretical part: discussion of theoretical issues. 3. Practical part: study of histological preparations under a light microscope. 4. Assessment of knowledge 5. Teacher's conclusion
<p>Purpose of the lesson: know the histogenesis, structure and histophysiology of the visual and olfactory organs; be able to determine under a microscope on histological preparations the main structures of the peripheral parts of analyzers; have an idea of the ultrastructure of receptor cells; be able to identify receptor cells on electronograms.</p>	
<p><u>Tasks of the teacher:</u></p> <ol style="list-style-type: none"> 1) to test theoretical knowledge students' knowledge about the development and structure of the visual and olfactory organs; 2) to deepen knowledge about the mechanism of perception of visual images, taste perception; 3) To expand knowledge about interneuronal connections in the retina, the organization of the peripheral olfactory analyzer; 4) to explain preparations using a computer. 5) teach to identify the parts of the eyeball under a microscope, to find 	<p><u>Learning outcomes:</u></p> <p>The student should know:</p> <ul style="list-style-type: none"> - the sources of development of the structural components of the eyeball; - the structure of the eyeball, have an idea of the three main functional apparatuses: dioptric, accommodative, and receptor; - the neural composition of the retina, features of the structure of photoreceptor cells; - auxiliary parts of the eye; - the structure of the olfactory organ, cellular composition, and the mechanism of smell perception. <p>The student must be able to:</p> <ul style="list-style-type: none"> - identify the cornea and the walls of the eyeball on micro - preparations;

the main structural elements on the preparations.	- find the membranes of the eyeball wall, their main structural elements, corneal and retinal layers; - describe and sketch the preparations, indicate all the main structures; - identify photoreceptor cells and olfactory cells on electronograms.
Methods and training	Interactive method "Brainstorming", organizer "Cluster", tables, solving situational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, videofilms, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening Clarify, ask questions
2-stage Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by students, demonstrates short videos. 2.3. Describes the scenario of the interactive method "Brainstorming", the method of creating the organizer "Cluster", запланированных planned for the lesson. Evaluates them. 2.4. Gives tasks for solving situational problems, evaluates their solution. 2.5. Evaluates the implementation of the SRS.	They answer questions. They're listening. They're listening. They ask questions and complete tasks using the "Brainstorming" method. Make up an organizer. They decide and respond Pass tasks on the SRS.

		They discuss and express their opinions.
3-Stage 3. Practical part (40 min)	3.1. Gives students an explanation of the practical part of the lesson. 3.2. Shows slides on medications. 3.3. Gives students tasks to acquire skills in the practical part of the lesson. 3.4. Checks the results of practical work.	They're listening. They ask questions. Understand what you need to pay attention to when viewing микропре- microscopes under a microscope They independently look at micro- preparations under a microscope and sketch them in their albums. Present the results of their work.
4-Stage 4. Conclude it- Final part (10 min)	4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal. 4.2. Assesses the degree of students' knowledge on the theoretical and practical part of the lesson, announces grades to students. 4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.	They're listening Listening Recording

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in пределах the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly

	and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
" 3" is satisfactory	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving situational problems. Passively participates in interactive games, and only answers some questions correctly.
" 2" is unsatisfactory	The student's answer on the topic is within 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Cannot solve operational problems. Doesn't perform any tasks on the topic during the session

Lesson#18.Topic: "ORGANS OF HEARING, BALANCE AND TASTE»

Training model

Time: 120 min.	Number of students: 14
1. Class location	Study room of the Department of Gynaecology and
2. Structure of the training session	6. Introduction 7. Theoretical part: discussion of theoretical issues. 8. Practical part: study of histological preparations under a light microscope. 9. Assessment of knowledge 10. Teacher's conclusion
<p>Purpose of the lesson: know the histogenesis, structure and histophysiology of the organs of hearing, balance and taste; be able to determine under a microscope on histological preparations the main structures of the peripheral parts of analyzers; have an idea of the ultrastructure of receptor cells.</p>	
<p><u>Tasks of the teacher:</u></p> <p>1) to test theoretical knowledge Students will learn about the development and structure of the organs of hearing, balance, and taste; 2) deepen their knowledge of the mechanism of sound perception, body position in space, and taste perception; 3) explain the localization and structure of receptor cells; 4) explain preparations using a computer. 5) teach them to identify the inner ear and taste bulb under a microscope, and to find their main structural elements on preparations.</p>	<p><u>Learning outcomes:</u></p> <p>The student should know:</p> <ul style="list-style-type: none"> - the structure of the three divisions of the ear: outer, middle and inner; - the structure of the membranous labyrinth, the organ of Corti, its cellular composition, ultrastructure of the hair cells; the structure of the organ of equilibrium, its cellular structure, particularly the ultrastructure of the receptor cells in contrast to the receptor cells of the organ of Corti; - the structure of the organ of taste, the cellular composition of gustatory bulbs. - the mechanism of perception of sounds, body position in space, taste. <p>The student must be able to:</p> <p>on micropipet Oh to find the bony and the membranous canal of the cochlea, its receptor part of the organ of</p>

	Corti, its main structure and cells, on drugs language found in the leaf-shaped dermal papilla taste of onions; - describe and sketch the preparations, to denote the basic structure; - to understand electronograms in the structure of the receptor cells of the organ of Corti, macula, Krista, gustatory bulbs.
Methods and means of training	Organizer "Cluster", tables, solving situational problems.
Forms of training	Работа Collective and group work, presentations.
Training equipment	Educational literature, lecture texts, handouts, banner, histological atlas, computer, microscopes, micro-preparations, video films, whiteboard, chalk.
Monitoring and evaluation	Oral, written, group learning tasks, situational tasks, etc.

Lesson flow chart

Work stages and time (120 min)	Activities	
	training	trainee
1-stage Introduction (10 min)	1.1. Checks traffic 1.2. Names the topics of the lesson, explains the purpose and expected results of the lesson. 1.3. Introduces the lesson plan. 1.4. Introduces the criteria for evaluating students' knowledge and skills.	Listen, record They're listening Clarify, ask questions
2-stage Theoretical part (60 min)	2.1. Conducts a survey and determines the initial knowledge of students. 2.2. Explains questions, that are not fully understood by the students, demonstrates short videos. 2.3. Describes the methodology for creating the "Cluster" organizer planned for the lesson. Evaluates it. 2.4. Gives tasks for solving situational problems, evaluates their solution. 2.5. Evaluates the implementation of the SRS.	They answer questions. They're listening. They're listening. They ask questions and complete tasks related to creating an organizer. They decide and respond Pass tasks on the SRS. They discuss and express their opinions.

3-Stage 3. Practical part (40 min)	<p>3.1. Gives students an explanation of the practical part of the lesson.</p> <p>3.2. Shows slides on medications.</p> <p>3.3. Gives students tasks to acquire skills in the practical part of the lesson.</p> <p>3.4. Checks the results of practical work.</p>	<p>They're listening. They ask questions. Understand what you need to pay attention to when viewing micro-data under a micro-scope. Самостоя-They independently look at micro-preparations under a microscope and sketch them in their albums. Present-the results of their work.</p>
4-Stage 4. Conclude it- Final part (10 min)	<p>4.1. Gives a conclusion on the topic, draws students' attention to the importance of the work done in their further professional activities, analyzes the degree of achievement of the lesson goal.</p> <p>4.2. Assesses the degree of students' knowledge on the theoretical and practical part of the lesson, announces grades to students.</p> <p>4.3. Announces tasks, references, and Internet sites related to the topic of the next lesson.</p>	<p>They're listening</p> <p>Listening</p> <p>Recording</p>

Criteria for evaluating current control

Rating	Degree of knowledge of the student
"5" excellent	The student's answer on the topic of the lesson is complete, the amount of knowledge within the limits of the program, answers reasonably and confidently. I have mastered the proposed main literature sources for the program and am familiar with additional literature. Performs assigned tasks during the lesson in a timely and high-quality manner. Solves operational tasks clearly and reasonably. Actively participates in the discussion of the topic and in discussions, defends their ideas. Actively and creatively participates in interactive games, fully answers questions.
"4" is good	Student's answer on the topic in пределах the program limits. I have mastered the suggested main literature sources for the program. Performs the assigned lesson tasks on time. When solving situational problems, he responds clearly and reasonably. Actively participates in the discussion of the topic, in discussions. Participates in interactive games, mostly answers questions correctly, but makes minor mistakes.
"3" is satisfactory	The student's answer on the topic is within the limits of 55-60% of the program. I learned some of the suggested sources of the main literature on the program. Has an idea of the structural and functional features of the organ. Additional questions are not fully answered. It makes mistakes when solving

	situational problems. Passively participates in interactive games, and only answers some questions correctly.
" 2" is unsatisfactory	The student's answer on the topic is within a 20-30% of the program, but does not answer theoretical questions. The suggested sources of the main literature have not been assimilated. He has no idea about the structural and functional features of the organ. Cannot solve operational problems. Doesn't perform any tasks on the topic during the session

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ADDITIONAL LITERATURE

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13. Jungueira L.C., Carneiro J. Basic Histology: Text and Atlas, 12-th ed.- 2010 –557p.

Sites from the Interneta

Internet information is obtained from the following sites:

www.histolchuvashia.com.; [donhist. fromru.com](http://donhist.fromru.com).; medmir.ru; www.molbiol.ru; www.pediatrica.ru; sdo.psu.edu.ru; [histology narod.ru](http://histology.narod.ru); <http://medic.med.uth.tmc.edu/Lecture/Main/Griff5.htm>; www.wplus.ru; www.rezko.ru; [catalog delovik.com](http://catalog.delovik.com).
<http://www.histology.narod.ru/>
<http://rsmu.ru/8894.html>
<http://www.dapamojnik.info/gist/>
www.morphology.dp.ua/hist.php
<http://histologyatlas.wisc.edu/>
<http://www.histology-world.com/>
<http://www.visualhistology.com/>
<http://www.bu.edu/histology/m/>