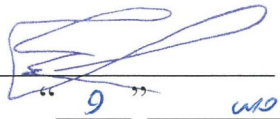
Документ подписан простой электронной подписью
Информация о владельце:
ФИО: Стегний Кирилл Владимирович
Должность: И.о. ректора
Дата подписания: 22.06.2026 11:13:33
Уникальный программный ключ:
d59234ba928aea5c04c54eb9013e367220b6b2ae

Federal State Budget Educational Institution
of Higher Education
Pacific State Medical University
of the Ministry of Health of the Russian Federation

APPROVED BY
First Vice-Rector

/ Trankovskaya L.V./
"9" июня 2025

DISCIPLINE WORK PROGRAM

Б1.О.12 Histology, embryology, cytology

(name of discipline)

Specialty	**31.05.01 General Medicine for international students (in English)** (code, name)
Degree	Specialist's degree
Profile	02 "Healthcare" (in the field of providing primary health care to the population in medical organizations: polyclinics, outpatient clinics, inpatient/outpatient facilities of the municipal health care system)
Mode of study	Full-time
Period of mastering the BEP	**6 years** (nominal length of study)
Department	of Histology, Embryology and Cytology

Vladivostok, 2025

Program of the discipline **Б1.О.12 Histology, embryology, cytology** is based on:
1) Federal State Educational Standard of Higher Education for the specialty approved by the Order No. 988 of Ministry of Science and Higher Education of the Russian Federation dated August 12, 2020.

2) Curriculum for the 31.05.01 General Medicine for international students (in English), profile 02 "Healthcare" (in the field of providing primary health care to the population in medical organizations: polyclinics, outpatient clinics, inpatient/outpatient facilities of the municipal health care system), approved by the Academic Council of FSBEI HE PSMU of the Ministry of Health of Russia, Report No. 8/24-25 dated March 31, 2025.

Work program for the discipline was developed by the writing team of the Department of Histology, Embryology and Cytology of the FSBEI HE PSMU of the Ministry of Health of Russia, under the guidance of the head of the department Doctor of Medical Sciences, Associate Professor Matveeva N.Yu.

Developed by:

Head of Department	Doctor of Medical Sciences, Associate Professor	Matveeva N.Yu.
(position held)	(academic degree, academic title)	(full name)
Senior Lecturer	PhD	Ivashkevich. D.N.
(position held)	(academic degree, academic title)	(full name)

1. GENERAL PROVISIONS

1.1. Purpose and Objectives of Mastering Б1.О.12 Histology, embryology, cytology

The purpose of mastering the discipline is to acquire fundamental knowledge, systemic scientific ideas about microscopic functional morphology and development of human cell, tissue, and organ systems, providing a basis for studying general professional disciplines and achieving professional competencies that contribute to the formation of a specialist.

Objectives of mastering the discipline:

1. Examine histofunctional characteristics of main systems of human body, principles of their embryonic development, as well as functional, age, and protective-adaptive changes of organs and their structural elements;
2. Learn international histological Latin terminology;
3. Develop skills of studying histological microscope slides using a light microscope;
4. Develop skills of identifying organs, their tissues, cells and non-cellular structures at the microscopic level;
5. Develop ideas about adaptation of cells and tissues to various biological, physical, chemical and other environmental factors;
6. Develop skills of independent analytical and research activity;
7. Develop skills of working with scientific literature, databases, and modern information systems, as well as basic methods of statistical processing of results, creation of multimedia slides presentations.

2. DISCIPLINE AS PART OF THE BASIC EDUCATIONAL PROGRAM

Discipline **Б1.О.12 Histology, embryology, cytology** is included in the Mandatory part of the Unit 1 of the basic educational program for the specialty 31.05.01 General Medicine for international students (in English), profile 02 "Healthcare" (in the field of providing primary health care to the population in medical organizations: polyclinics, outpatient clinics, inpatient/outpatient facilities of the municipal health care system), and is part of the 2nd and 3rd semesters' curriculum.

3. PLANNED LEARNING OUTCOMES OF THE DISCIPLINE

3.1. Mastering the discipline **Б1.О.12 Histology, embryology, cytology** is aimed at the development of students' competencies. The discipline facilitates the development of students' competencies corresponding to the types of professional activity.

Competency Code	**Competency Description**	**Competency Indicators**
Universal Competencies		
Systemic and critical thinking	UC-1. Is able to analyze of problems critically using system approach and devise a plan of action	CI.UC-1_1- looks for and investigates problem situations that arise during professional activity CI.UC-1_2- selects sources of information for critical analysis of problem situations that arise during professional activity CI.UC-1_3- develops and substantively argues a plan of action for solving problem situations using systemic and interdisciplinary approaches
General Professional Competencies		
Etiology and pathogenesis	GPC-5. Is able to assess morphofunctional status, physiological states, and pathological processes in the human body when working to achieve objectives of professional activity	CI.GPC-5_1- assesses the morphofunctional state based on the acquired knowledge CI.GPC-5_2- distinguishes between pathological and physiological processes, identifies etiology of changes CI.GPC-5_3- provides diagnostic assessment of the identified changes

3.2. Types of professional activity corresponding to competencies developed over the course of mastering **Б1.О.12 Histology, embryology, cytology**:

Types of professional activity objectives

1. *Medical*

Kinds of professional activity objectives

1. *Diagnostics*
2. *Treatment*

3.3. Planned learning outcomes of mastering the discipline are represented by knowledge, skills, abilities and/or experience, characterize the stages of developing competencies and ensure achievement of the planned outcomes of mastering the basic educational program. Learning outcomes of a discipline are correlated with competency indicators.

4. SCOPE AND CONTENT OF THE DISCIPLINE

4.1. Scope of the Discipline and Types of Academic Work

Type of Academic Work		**Total Hours**	**Semesters**	
			2	**3**
			hours	**hours**
1		2	3	4
Classroom hours (total), including:		**164**	**72**	**92**
Lectures (L)		48	20	28
Practical classes (C)		116	52	64
Independent work of the student (IW), including:		**88**	**36**	**52**
Writing a research paper		13	5.5	7.5
Writing an essay		5	2	3
Writing a library research paper		4	1.5	2.5
Calculation and graphic assignments		5	2	3
Preparing for classes (CP)		33	13	20
Preparing for continuous assessment (CAP)		16	7	9
Preparation for interim assessment (IAP)		12	5	7
Interim assessment		36		36
Type of interim assessment	pass/fail test (T)			
	exam (E)	E		E
TOTAL: TOTAL credit value	hrs.	**288**	**108**	**180**
	credits	**8**	**3**	**5**

4.2. Contents of the Discipline

4.2.1. Topics of Discipline Lectures and Academic Hours per Semester

No.	**Lecture Topic**	**Hours**
1	2	3
	Semester No. 2	
1.	Cell structure and function	2
2.	Methods of cell reproduction. Apoptosis and necrosis	2

3.	Tissues. General characteristics of epithelial tissues	2
4.	General characteristics and classification of mesenchymal tissues. Connective tissues. Bone tissue	2
5.	Blood	2
6.	Hematopoiesis	2
7.	Cartilaginous and muscle tissue	2
8.	Nervous tissue and spinal cord system	2
9.	Cerebral cortical histology	2
10.	Sensory system	2
	Hours per semester total	**20**
	Semester No. 3	
1.	Cardiovascular system	2
2.	Hematopoietic organs and organs of immune defense	2
3.	Digestive system: anterior part (foregut)	2
4.	Digestive system: middle and posterior parts (midgut and hindgut)	2
5.	Digestive glands. Salivary glands. Pancreas. Liver	2
6.	Respiratory system. Skin	2
7.	Endocrine system. Hypothalamo-hypophyseal system	2
8.	Endocrine system. Peripheral endocrine glands	2
9.	Urinary system	2
10.	Male reproductive system	2
11.	Female reproductive system	2
12.	Human embryogenesis. Temporary embryonic organs	2
13.	Temporary embryonic organs	2
14.	Cell renewal and ageing mechanisms	2
	Hours per semester total	**28**

4.2.2. Topics of Discipline Practical Classes and Academic Hours per Semester

No.	**Practical Class Topic**	**Hours**
1	2	3
	Semester No. 2	
1	Histological techniques. Preparation of permanent histological microscope slides	4
2	Cell structure and function. Cell response to damage	4
3	Seminar on "Cytology"	4
4	Epithelial tissues	4
5	Mesenchyma. Connective tissues	4
6	Blood	4
7	Hematopoiesis. Immune system	4
8	Cartilage tissue. Bone tissue	4
9	Muscle tissue. Seminar on "Tissues"	4
10	Nervous tissue. Spinal cord system. Autonomous nervous system	4
11	Cerebral cortical histology	4
12	Sensory system. Visual and olfactory organs. Auditory, equilibrial, and gustatory organs	4
13	Seminar on "Nervous system. Sensory system"	4
	Hours per semester total	**52**
	Semester No. 3	
1	Seminar on "Tissues". Seminar on "Nervous system. Sensory system"	4

2	Cardiovascular system	4
3	Immune system: hematopoietic organs and organs of immune defense	4
4	Digestive system: anterior part (foregut)	4
5	Digestive system: middle and posterior parts (midgut and hindgut)	4
6	Digestive system: large glands of the digestive tract	4
7	Seminar "Cardiovascular system," "Digestive system," "Hematopoietic organs and organs of immune defense"	4
8	Respiratory organs. Skin and its derivatives	4
9	Endocrine system. Hypothalamo-hypophyseal system	4
10	Endocrine system. Peripheral endocrine glands	4
11	Urinary system	4
12	Seminar "Endocrine system," "Urinary system," "Respiratory organs. Skin"	4
13	Introduction to embryology. Male reproductive system	4
14	Female reproductive system. Ovary. Uterus. Ovarian-menstrual cycle	4
15	Human development: temporary embryonic organs	4
16	Seminar "Male reproductive system," "Female reproductive system," "Embryonic human development"	4
	Hours per semester total	**64**

4.2.3. Independent Work of the Student

No.	Name of the Discipline Section	Type of IW	Total Hours
1	3	4	5
	Semester No. 2		
1	Cell membrane, Intercellular contacts	Preparing for assessment; writing a report on the independent work; writing an essay	4
2	Cell life cycle. Apoptosis and necrosis	Writing a report; preparing for tests; writing an essay	4
3	Blood and lymph. Hematopoiesis	Preparing for discussion; writing a library-research paper; preparing diagrams and illustrations	4
4	Immune system	Writing a library-research paper; writing an essay; preparing diagrams	4
5	Muscle tissue	Preparing for discussion; preparing for assessment; preparing for tests	4
6	Nervous tissue and neuroglia	Writing a library-research paper; writing an essay; preparing illustrations	4
7	Spinal cord	Preparing diagrams and illustrations; preparing for assessment	4
8	Cerebral cortex, cerebellar cortex	Writing an essay; writing a library-research paper; preparing tables, diagrams and illustrations	4
9	Autonomous nervous system	Preparing for assessment; preparing diagrams	4
	Hours per semester total		**36**
	Semester No 3		
1	Structural organization of the immune system	Writing a library-research paper; writing an essay; preparing illustrations	5
2	Digestive system: anterior part (foregut)	Preparing diagrams and illustrations	5
3	Digestive system: middle part (midgut)	Preparing for assessment; preparing diagrams; preparing for tests	5

4	Pancreas. Liver	Writing a library-research paper; preparing diagrams and illustrations	5
5	Respiratory system	Writing a library-research paper; preparing diagrams and illustrations	5
6	Endocrine system	Writing an essay; preparing tables, diagrams and illustrations	5
7	Urinary system. Kidneys	Preparing diagrams; preparing for tests	5
8	Male reproductive system	Writing a library-research paper; writing a report on the independent work; preparing diagrams	5
9	Female reproductive system	Preparing diagrams and illustrations, writing a report on the independent work	6
10	Human embryogenesis. Extraembryonic organs	Preparing diagrams; preparing for tests	6
	Hours per semester total		**52**

5. REQUIREMENTS FOR IMPLEMENTATION OF DISCIPLINE

5.1. Discipline Requirements for Educational Materials and Provided Information

Essential reading

No.	Name/Title, Resource Type	Author(s)/Editor	Publisher Imprint, Web Address	Number of Copies (accesses) in the Library and Information Center
1	**2**	**3**	**4**	**5**
1	Histology, Cytology and Embryology: Atlas: text-book	Bykov, V.L. / V.L. Bykov, S.I. Yushkantseva	M.: GEOTAR-Media, 2015. - 296 p.	50
2	Histology, Embryology, Cytology: text-book for universities	Yu.I. Afanasyev, N.A. Yurina, B.V. Aleshin et al.; edited by Yu.I. Afanasyev, N.A. Yurina. - 7th ed., rev. and suppl.	M.: GEOTAR-Media, 2021. - 828, [4] p.	50
3	Histology, Embryology, Cytology: text-book [Electronic resource]	Yu.I. Afanasyev, N.A. Yurina, E.F. Kotovsky et al.; edited by Yu.I. Afanasyev, N.A. Yurina. - 6th ed., rev. and suppl.	M.: GEOTAR-Media, 2016. - 800 p. URL: http://www.studmedlib.ru	Unlimited access
4	Histology, Embryology, Cytology: text-book [Electronic resource]	N.V. Boychuk, R.R. Islamov, E.G. Ulumbekov, Yu.A. Chelyshev; edited by E.G. Ulumbekov, Yu.A. Chelyshev	M.: GEOTAR-Media, 2016. URL: http://www.studmedlib.ru	Unlimited access
5	Guide to Histology: in 2 volumes. Vol. 1 [Electronic resource]	edited by R.K. Danilov. - 2nd ed., corr. and suppl.	St. Petersburg: SpetsLit, 2011. - 831 p. URL: http://books-up.ru/	Unlimited access
6	Guide to Histology: in 2 volumes. Vol. 2 [Electronic resource]	edited by R.K. Danilov. - 2nd ed., corr. and suppl.	St. Petersburg: SpetsLit, 2011. - 511 p. URL: http://books-up.ru/	Unlimited access
7	Histology, Embryology, Cytology: text-book [Electronic resource]	Danilov R.K., Borovaya T.G.	M.: GEOTAR-Media, 2020. - 528 p. URL: http://www.studentlibrary.ru	Unlimited access

Supplementary reading

No.	Name/Title, Resource Type	Author(s)/Editor	Publisher Imprint, Web Address	Number of Copies (accesses) in the Library and Information Center
1	2	3	4	5
1	Atlas of Histology: more than 500 color illustrations	edited by U. Welsch; [translated from German edited by V.V. Banin]	M.: Geotar-med, 2011. - 253, [1] p.	5
2	Terminologia Embryologica. International terms on human embryology with an official list of Russian equivalents [Electronic resource]	edited by L.L. Kolesnikov, N.N. Shevlyuk, L.M. Erofeeva	M.: GEOTAR-Media, 2014. URL: http://www.studmedlib.ru	Unlimited access
3	Histology, Cytology and Embryology. Atlas: text-book [Electronic resource]	V.L. Bykov, S.I. Yushkantseva	M.: GEOTAR-Media, 2013. - 296 p. URL: http://www.studmedlib.ru	Unlimited access
4	Histology, Embryology, Cytology [Electronic resource]	N.Yu. Matveeva, S.G. Kalinichenko, I.V. Kovaleva, S.S. Edranov, A.V. Korobtsov, I.I. Vavilova; edited by N.Yu. Matveeva	Vladivostok: Meditsina DV, 2015. - 256 p. URL: http://www.studentlibrary.ru	Unlimited access

Online resources

1. Electronic library system "Student Consultant" http://studmedlib.ru/
2. Electronic library system "University Library Online"http://www.biblioclub.ru/
3. Electronic library system "Urait" https://urait.ru/
4. Electronic library system "BookUp" https://www.books-up.ru/
5. Resources owned by the Library and Information Center of FSBEI HE PSMU of the Ministry of Health of Russia https://tgmu.ru/university/bibliotechno-informacionnyj-centr/resursy-bic/sobstvennye/

Online resources and respective user guides are available on the Library and Information Center website Library and Information Center — PSMU (tgmu.ru)

5.2. Discipline Requirements for Facilities and Resources

Information on the facility and resource availability and requirements of the discipline is available on the Facility and resource availability and requirements. FSBEI HE PSMU of the Ministry of Health of Russia (tgmu.ru)" page of the official website of the university.

5.3. List of Information Technologies, Information and Reference Systems, Licensed and Free Software (Including Domestically-developed Software):

1. PolycomTelepresence M100 Desktop Conferencing Application (Videoconference system)
2. SunRav Software tTester
3. 7-PDF Split & Merge
4. ABBYYFineReader
5. Kaspersky Endpoint Security
6. INDIGO online testing system
7. Microsoft Windows 7
8. Microsoft Office Pro Plus 2013
9. 1C:University
10. GARANT system
11. MOODLE (Modular Object-Oriented Dynamic Learning Environment)

6. ASPECTS OF THE IMPLEMENTATION OF THE DISCIPLINE FOR STUDENTS WITH DISABILITIES AND SPECIAL NEEDS

6.1. Availability of Accessible Environment

For students with disabilities and special needs, if a written application is submitted, lectures and practical classes are carried out taking into account health limitations, individual capabilities and medical status (hereinafter referred to as individual characteristics) of the student. Compliance with the following general requirements is ensured: teaching aids for collective and individual use are provided, required technical assistance is provided by an assistant; buildings and premises where lectures and practical classes are taking place meet accessibility requirements, other arrangements lack of which makes it impossible or difficult to master the discipline are made.

6.2. Ensuring Compliance with General Requirements

When lectures and practical classes are carried out at the written application of the student, the following general requirements are met: lectures and practical classes for students with disabilities and special needs take place at the same location as for students who do not have disabilities, if this does not cause difficulties for students; an assistant (assistants), who provide(s) students with the necessary technical assistance taking into account individual characteristics of the student, is (are) provided; necessary teaching aids are provided, taking into account individual characteristics of the student.

6.3. Availability of the Internal Policies and Procedures of FSBEI HE PSMU of the Ministry of Health of Russia to Students with Disabilities in a Format Accessible to Them.

All internal policies and procedures of FSBEI HE PSMU of the Ministry of Health of Russia concerning the discipline are made available to students with disabilities in a format accessible to them.

6.4. Increase in the Time Limit of Interim Assessment for Students with Disabilities and Special Needs in Relation to the Established duration

Format of the interim assessment of academic performance within the scope of the discipline conducted for students with disabilities and special needs is selected taking into account individual characteristics of the students (orally, by writing on paper, by typing on a computer, as a test, etc.). The duration of the interim assessment in relation to the established duration is increased at the written application of the student with disabilities. Time limit for the student's preparation for the test is increased by at least 0.5 hours.

7. STAFFING REQUIREMENTS OF THE DISCIPLINE

Academic teaching personnel that ensure the implementation of the discipline education process meet the requirements of the Federal State Educational Standard of Higher Education for the 31.05.01 General Medicine specialty; list of the aforementioned personnel is available on the website of the educational organization.

8. TUTORIAL WORK

Type of tutorial work	Forms and approaches to tutorial work	Assessment criteria
Assistance in personal growth	Overt Debates, master classes, Olympiads, professional events (volunteers, organizers, administrators) for the discipline. Events for the prevention of offenses, extremism, deviant behavior: - Curatorial hour: corporate culture of the university (acquaintance with the University Charter, the Ethical Code of students in medicine and pharmacy) - Thematic information hour: history and traditions of the university, faculty, department - Thematic information hour: “what is terrorism”	Portfolio
	Covert – creating atmosphere and infrastructure. Formation of a healthy lifestyle culture, development of the ability to preserve and strengthen health: - Information-plus: healthy lifestyle of student youth in modern society - Thematic information hour: about the harm of smoking; social advertising about the harm of smoking for girls. Secrets of manipulation. The harm of alcohol - Thematic information hour: student leisure (interests, communication, organization of free time, self-realization) Formation of motivation for professional, research, organizational-managerial and other types of professional activities: - Curatorial hour: rational organization of independent work of students, proper planning of the working day - Thematic information hour: your "ideal image" of a university graduate - Information digest: weekly five-minute session with free choice of topics (creative abilities of students, analysis of educational activities, career guidance work)	
Civic position and values	Overt Conducting events that promote the education of civic and legal culture (round tables, debates, discussions): - Information hour "You ask - we answer": career guidance work, student communities. - Thematic information hour: Formula for success in student's educational activities Topical short debates in case of special events:	Portfolio

	- Information digest: weekly five-minute session with free choice of topics (creative abilities of students, analysis of educational activities, career guidance work)	
	Covert Development of socially significant personality traits and independent experience of social activity: - Information-plus: healthy lifestyle of student youth in modern society - Thematic information hour: about the harm of smoking; social advertising about the harm of smoking for girls. Secrets of manipulation. The harm of alcohol - Thematic information hour: student leisure (interests, communication, organization of free time, self-realization)	
Social values	Overt Covering issues related to the organization of a healthy lifestyle based on health preservation: - Information-plus: healthy lifestyle of student youth in modern society - Thematic information hour: about the harm of smoking; social advertising about the harm of smoking for girls. Secrets of manipulation. The harm of alcohol	Portfolio
	Covert Awareness of belonging to the professional medical (pharmaceutical) community, recognition of the features of corporate ethics: - Information hour "You ask - we answer": career guidance work, student communities - Thematic information hour: “what is terrorism” - Thematic information hour: Formula for success in student's educational activities	