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

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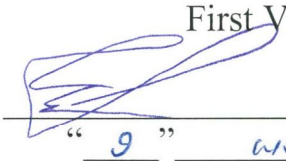
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DISCIPLINE WORK PROGRAM

Б1.О.08 Biochemistry

(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)
Institute	of Fundamentals and Information Technologies in Medicine

Vladivostok, 2025

Program of the discipline **Б1.О.08 Biochemistry** 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 Institute of Fundamentals and Information Technologies in Medicine of the FSBEI HE PSMU of the Ministry of Health of Russia, under the guidance of the director of the institute Candidate of Medical Sciences Bagryantsev V.N.

Developed by:

Assistant professor	Candidate of Biological sciences, Associate professor	Artyukova O.A.
(position held)	(academic degree, academic title)	(full name)

1. GENERAL PROVISIONS

1.1. Purpose and Objectives of Mastering Б1.О.08 Biochemistry

The purpose of mastering the discipline is acquiring knowledge about the structure, properties and functions of biomolecules and the main metabolic pathways of their transformations, which determine the state of health and adaptation of the body under normal conditions and during the development of pathologies, including hereditary ones; preparing to use the knowledge gained in the development of clinical disciplines and in subsequent professional activities.

Objectives of mastering the discipline:

1. Acquire systemic knowledge about the chemical structure of the main substances of the body and the molecular foundations of biochemical processes at the core of life;
2. Learn about the basic laws of metabolic processes, regulation of metabolism and its relationship with the functional activity of the living system;
3. Study the methods of biochemical research, ability to use research results to assess the state of human health, diagnose diseases, predict and assess the effectiveness of treatment;
4. Understand the mechanisms of the development of pathological processes, taking into account the main types of inherited metabolic defects.

2. DISCIPLINE AS PART OF THE BASIC EDUCATIONAL PROGRAM

Discipline **Б1.О.08 Biochemistry** 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.08 Biochemistry** is aimed at the development of students' competencies. The discipline facilitates the development of students' competencies corresponding to the types of professional activity.

Name of competency category (group) / Labor function	**Code and Name of competency of the graduate**	**Competency Indicators**
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
Professional Competencies		
A/02.7 Examination of the patient in order to make a diagnosis	PC-3 Ability and readiness to collect and analyze complaints that a patient presents with, anamnestic data, examination results, results of laboratory and instrumental tests, biopsy and other studies in order to identify patient's condition or establish the presence or absence of a disease	CI.PC-3_3- selects required additional diagnostic methods, evaluates their results in order to recognize patient's condition, establish the presence or absence of the disease

3.2. Types of professional activity corresponding to competencies developed over the course of mastering **Б1.О.08 Biochemistry**:

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**	
			3	**4**
			hours	**hours**
1		2	3	4
Classroom hours (total), including:		**156**	**92**	**64**
Lectures (L)		48	28	20
Practical classes (C)		108	64	44
Independent work of the student (IW), including:		**96**	**52**	**44**
Preparing for classes (CP)		72	38	34
Preparing for continuous assessment (CAP)		24	14	10
Preparation for interim assessment (IAP)				
Interim assessment		36		36
Type of interim assessment	pass/fail test (T)			
	exam (E)	E		E
TOTAL: TOTAL credit value	hrs.	**288**	**144**	**144**
	credits	**8**	**4**	**4**

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. 3	
1.	Structure and functions of proteins. The role of proteomics in assessing pathological conditions	2
2.	Structure and functions of enzymes. The mechanism of enzymatic catalysis. Cofactors and coenzymes. Vitamins. Specificity of enzyme effect. Inhibition of enzyme activity	2
3.	Induction and repression of enzyme synthesis. Allosteric regulation. Covalent modification of enzymes. Enzyme diagnostics and enzyme therapy	2
4.	Introduction to metabolism. General catabolism pathway. Biological oxidation.	2

	Composition, structure, and nomenclature of respiratory complexes and other components of the respiratory chain and energy metabolism	
5.	The mechanism of coupling oxidation and phosphorylation. Extramitochondrial types of oxidation. Microsomal oxidation. Reactive oxygen species (ROS): formation, toxic effects	2
6.	Carbohydrates. The key role of glucose-6-phosphate, metabolic pathways. The sequence of reactions in aerobic and anaerobic glycolysis. Key reactions in gluconeogenesis. Cori's glucose-lactate cycle	2
7.	Metabolism of glycogen as a reserve polysaccharide. The pentose phosphate pathway of glucose conversion. Metabolism of fructose and galactose. Regulation of blood glucose levels	2
8.	Lipids in biological membranes, their connection to cell function and adaptation	2
9.	Digestion of lipids in the gastrointestinal tract. Fatty acid metabolism. Synthesis of ketone bodies. Essential fatty acids. Formation of eicosanoids, their biological role	2
10.	Synthesis and breakdown of TAG and FL. Lipotropic factors	2
11.	Protein and amino acid metabolism. Amino acid deamination. Amino acid transamination. Aminotransferases. Urea synthesis in the liver (ornithine cycle)	2
12.	Amino acid decarboxylation. Transmethylation reactions, the role of H4-folate. Metabolism of individual amino acids. Causes and consequences of impaired amino acid metabolism	2
13.	Nucleic acids. Synthesis and catabolism of purine and pyrimidine nucleotides. Disorders of purine base catabolism. Gout, Lesch-Nyhan syndrome	2
14.	Matrix biosynthesis. Replication, transcription, translation. Post-translational protein modification. Matrix synthesis inhibitors. DNA degradation and repair	2
Hours per semester total		**28**
Semester No. 4		
1.	Interrelationships in metabolism. Hormonal regulation as a mechanism of intercellular and interorgan coordination of metabolism. Mechanism of hormonal signal transmission to cells	2
2.	Regulation of energy metabolism, the role of insulin and counterinsular hormones. Regulation of anabolic processes	2
3.	Regulation of water and mineral metabolism	2
4.	Biochemistry of the liver. Features of hepatocyte metabolism. Antitoxic function of the liver. Biochemical markers of liver damage	2
5.	The main functions of blood. The protein spectrum of blood. Blood protein fractions, “acute phase” proteins, composition, functions, diagnostic significance. Structure and metabolism of erythrocytes. Structure and biosynthesis of heme, regulation, biosynthesis disorders. Iron metabolism in the body	2
6.	Hemoglobin catabolism, formation and detoxification of bilirubin. Jaundice and its biochemical markers	2
7.	Biochemistry of the intercellular matrix, collagen proteins, synthesis, role of ascorbic acid. Non-collagen proteins. Metalloproteinases. Glycosaminoglycans	2
8.	Biochemistry of muscles. Energy metabolism of muscle contraction	2
9.	Biochemistry of nervous tissue, chemical composition, energy metabolism. Biochemistry of the generation and conduction of nerve impulses. Mediators	2
10.	Biochemistry of the kidneys and urine formation. Features of metabolism and functions of nephrons. Normal and pathological components of urine. Biochemical markers of kidney damage	2
Hours per semester total		**20**

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

No.	Practical Class Topic	Hours
1	2	3
	Semester No. 3	
1	Module 1. Levels of protein structural organization. Classification of proteins. Physical and chemical properties of proteins. Functions of proteins. Practical skills training: purification of protein solutions (dialysis), reversible protein precipitation reactions (salting out), irreversible protein precipitation reactions with heavy metal salts, determination of protein in urine by precipitation	4
2	Module 1. Structure and functions of enzymes. Mechanism of enzymatic catalysis. Classification and nomenclature of enzymes. Specificity of action, inhibition of enzyme activity. Practical skills training: the effect of pH, temperature, and inhibitors on catalytic activity	4
3	Module 1. Classification and nomenclature of vitamins. Practical skills training: determination of vitamin C in food products. Select representatives of vitamins. Sources, biological role, manifestations of vitamin deficiencies. Hypervitaminosis	4
4	Module 1. Regulation of enzyme activity. Enzyme diagnostics and enzyme therapy. Enzymopathies Module knowledge assessment	4
5	Module II. General catabolic pathway. Oxidative decarboxylation of pyruvic acid. Citric acid cycle. Composition, structure, and nomenclature of respiratory complexes and other components of the respiratory chain, their localization and functions in the inner membrane of mitochondria. Practical skills training: vitamins B1 and B2 identification tests	4
6	Module II. The mechanism of coupling oxidation and phosphorylation. The P/O ratio. Respiratory chain inhibitors and uncouplers of oxidative phosphorylation. Energy-deficient states	4
7	Module II. Extramitochondrial types of oxidation. Microsomal oxidation, characteristics, physiological significance. Reactive oxygen species (ROS): formation, toxic effects. Mechanisms of protection against the toxic effects of ROS. Module knowledge assessment	4
8	Module III. Pathways of entry and transformation of carbohydrates in body tissues. Reactions of aerobic and anaerobic glycolysis. Key reactions in the process of gluconeogenesis. Glycogen metabolism. Pentose phosphate pathway. Fructose and galactose metabolism	4
9	Module III. Sources of blood glucose. Regulation of blood glucose levels. Practical training: determination of blood glucose levels using the glucose oxidase method. Module knowledge assessment	4
10	Module IV. Biological membranes, their composition and significance. Membrane lipids. Digestion of lipids in the gastrointestinal tract. Breakdown of triacylglycerols. β-oxidation of fatty acids. Synthesis of ketone bodies	4
11	Module IV. Synthesis of palmitic acid. Synthesis of triacylglycerols and glycerophospholipids. Lipotropic factors. The role of cholesterol in metabolism	4
12	Module IV. Lipoproteins as a transport form of lipids, their metabolism. Lipid metabolism disorders, dyslipoproteinemia. Obesity. Practical skills training: determination of cholesterol levels in blood serum. Module knowledge assessment	4
13	Module V. Protein digestion, amino acid absorption. Amino acid pool. Deamination, transamination, and decarboxylation of amino acids. Biogenic amines. Practical skills training: determination of gastric acidity	4
14	Module V. End products of nitrogen metabolism. Urea synthesis. Disorders of urea	4

	synthesis and excretion as the main cause of various types of hyperammonemia, uremia, and azotemia. Metabolism of individual amino acids. Module knowledge assessment	
15	Module VI. Biosynthesis and catabolism of nucleotides. Practical skills training: determination of uric acid in blood and urine. Matrix biosynthesis. Replication, transcription, repair. Regulation of these processes	4
16	Module VI. Protein biosynthesis. Post-translational modification of proteins. Matrix biosynthesis inhibitors. Regulation of gene expression. Molecular mutations and recombinations. Hereditary diseases. Module knowledge assessment	4
Hours per semester total		**64**
	Semester No. 4	
1	Module VII. The role of hormones in the regulation of metabolism. Classification of hormones, mechanism of action. Hypothalamic and pituitary hormones. Practical skills training: hormone identification tests	4
2	Module VII. Regulation of energy metabolism, the role of insulin and counterinsular hormones. Changes in hormonal status and metabolism in patients with diabetes mellitus. Practical skills training: assessment of glucose tolerance	4
3	Module VII. Regulation of water-salt metabolism. The role of hormones in the regulation of calcium and phosphate metabolism. Module knowledge assessment	4
4	Module VIII. Total protein and protein fractions in blood, acute phase proteins. Plasma enzymes, their significance for enzyme diagnostics. Non-protein organic components of plasma and urine. The most important nitrogen-containing compounds in plasma and urine. Practical training: quantitative determination of total protein in blood serum using refractometry	4
5	Module VIII. Biosynthetic, bile-forming, and detoxifying functions of the liver. Biochemical markers of liver damage. Practical training: thymol turbidity test	4
6	Module VIII. Structure and biosynthesis of heme, its regulation. Iron metabolism. Hemoglobin catabolism, formation and detoxification of bilirubin, jaundice. Module knowledge assessment	4
7	Module IX. Biochemistry of connective tissue and intercellular matrix	4
8	Module IX. Biochemistry of muscles. Mechanisms of muscle contraction and relaxation. Practical training: determination of creatinine level in urine	4
9	Module IX. Biochemistry of nervous tissue. Practical training: determination of protein content in cerebrospinal fluid	4
10	Module IX. Features of metabolism in the kidneys. Chemical composition of urine. Practical training: rapid methods of determining pathological components in urine. Module knowledge assessment	4
11	Final class session. Discipline knowledge control and competency assessment	4
Hours per semester total		**44**

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. 3		
1	Module 1. Structure and	- Preparing for practical classes	10

	functions of proteins and enzymes. Vitamins	- Writing a report (slides presentation) - Compiling tables: “Classification of complex proteins”; “Peptides”; “Classification of enzymes”; “Characteristics of vitamins” - Compiling a glossary of terms of the Module - Preparing for module knowledge assessment	
2	Module 2. Introduction to metabolism. Biological oxidation	- Preparing for practical classes - Writing a report (slides presentation) - Compiling tables: “Enzymes and coenzymes of the PDC”; “Inhibitors of tissue respiration” - Compiling a glossary of terms of the Module - Preparing for module knowledge assessment - Independent studying the topic of “Mechanisms of protection against the toxic effects of oxygen”	8
3	Module 3. Metabolism and functions of carbohydrates	- Preparing for practical classes - Writing a report (slides presentation) - Compiling tables: “Carbohydrate digestion in the gastrointestinal tract”; “Hormonal regulation of carbohydrate metabolism” - Compiling a glossary of terms of the Module - Preparing for module knowledge assessment	8
4	Module 4. Functions and metabolism of lipids. Biological membranes, structure and functions	- Preparing for practical classes - Writing a report (slides presentation) - Compiling tables: “Lipid digestion in the gastrointestinal tract,” “Hormonal regulation of lipid metabolism”, “Classification of blood lipoproteins” - Compiling a glossary of terms of the Module - Preparing for module knowledge assessment - Independent studying the topic of “Integral and peripheral membrane proteins, basic properties and functions of biomembranes. Transmembrane transport of large molecules (endocytosis, exocytosis)”	10
5	Module 5. Metabolism of proteins and amino acids	- Preparing for practical classes - Writing a report (slides presentation) - Compiling tables: “Protein digestion in the gastrointestinal tract”; “Biogenic amines”; “Amino acid metabolism disorders”; - Compiling a glossary of terms of the Module - Preparing for module knowledge assessment - Independent studying the topics of “Protein putrefaction (fermentation) in the intestine”, “Histidine metabolism”	8
6	Module 6. Exchange and functions of nucleic acids. Matrix biosynthesis	- Preparing for practical classes - Writing a report (slides presentation) - Compiling tables: “Proteins and enzymes of the replication complex”; “Mutations”, “Inhibitors of matrix biosynthesis” - Compiling a glossary of terms of the Module - Preparing for module knowledge assessment - Independent studying the topic of “DNA repair as the basis for genome stability”	8

Hours per semester total			**52**
	Semester No. 4		
7	Module 7. Hormones. Hormonal regulation of metabolic processes	- Preparing for practical classes - Writing a report (slides presentation) - Compiling tables: “Functional classification of hormones” - Compiling a glossary of terms of the Module - Preparing for module knowledge assessment - Independent studying the topics of “Hormones of adrenal glands, metabolic changes in patients with hypo- and hypercortisolism”, “Role of insulin and contrinsular (counterregulatory) hormones in maintaining homeostasis during starvation”	16
8	Module 8. Blood biochemistry	- Preparing for practical classes - Writing a report (slides presentation) - Compiling tables: “Characteristic of blood proteins” - Compiling a glossary of terms of the Module - Preparing for module knowledge assessment - Independent studying the topics of “Non-protein organic components of plasma. The most important nitrogen-containing compounds in plasma. Blood cells. Aspects of structure and differentiation of erythrocytes”, “Molecular mechanisms of gas exchange in the lungs and tissues. Buffer systems of the blood: bicarbonate, phosphate, protein, hemoglobin acid-base buffer systems. Causes and forms of acidosis and alkalosis”	12
9	Module 9. Biochemistry of select organs and tissues: connective, muscle, and nervous tissue. Features of metabolism in the kidneys	- Preparing for practical classes - Writing a report (slides presentation) - Compiling tables - Compiling a glossary of terms of the Module - Preparing for module knowledge assessment - Independent studying the topics of “Non-collagenous proteins of the intercellular matrix”, “Cells of the nervous tissue; brief characteristic of neurons and glial cells. Myelin: structure, lipid composition. Chemical composition of the gray and white matter. Emergence and spread of a nerve impulse, changes in transmembrane Na+ and K+ gradient (action potential)”	16
Hours per semester total			**44**

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	Биохимия: учебник [Электронный ресурс]	под ред. Е.С. Северина. - 5-е изд., испр. и доп.	М.: ГЭОТАР-Медиа, 2016.-768 с. URL: http://www.studentlibrary.ru	Unlimited access
2	Биохимия с упражнениями и задачами : учеб. для вузов	под ред. А. И. Глухова, Е. С. Северина	М. : ГЭОТАР-Медиа, 2019. – 383 с.	25
3	Биологическая химия с упражнениями и задачами: учебник [Электронный ресурс]	под ред. С. Е. Северина, А. И. Глухова. - 3-е изд., стереотипное	М. : ГЭОТАР-Медиа, 2023. - 624 с. URL: http://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	Наглядная биохимия [Электронный ресурс]	Я. Кольман, К.-Г. Рём, пер. с англ. Т.П. Мосоловой. - 6-е изд. (эл.).	М. : Лаборатория знаний, 2019. – 514 с. URL:http://www.studentlibrary.ru	Unlimited access
2	Биологическая химия: учеб. пособие [Электронный ресурс]	Василенко, Ю. К. – 3-е изд.	М. : МЕДпресс-информ, 2021. - 432 с. URL: http://books-up.ru/	Unlimited
3	Биологическая химия : учебное пособие для вузов	В. Г. Дрюк, С. И. Скляр, В. Г. Карцев. - 2-е изд., перераб. и доп.	Москва : Издательство Юрайт, 2021. - 292 с. - URL: https://urait.ru/	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 for international students (in English) 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 Talks and problem-centric debates aimed at promotion of healthy lifestyle. Participation in interdepartmental conferences aimed at formation of healthy lifestyle and development of skills necessary to preserve and improve health.	Portfolio
	Covert – creating atmosphere and infrastructure. Developing a culture of healthy lifestyle, the ability to preserve and improve health. Creating atmosphere of kindness and respect with a high level of communication during implementation of the discipline.	
Civic position and values	Overt Conducting events that facilitate development of civil culture (roundtable discussions, discussions/debates, and talks). Short discussions on current significant events in case the latter occur.	Portfolio
	Covert Focusing on civic values-oriented position and legal awareness. Cultivating mindful social position during professional activity.	
Social values	Overt Highlighting aspects of organization of healthy lifestyle based on health-preserving technologies. Highlighting ecology-related questions, environmental issues as a factor affecting population health and select population risks.	Portfolio
	Covert Identification in social structure during period of education and in professional activity.	