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ФИО: Кузнецов Владимир Вячеславович
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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

APPROVED BY
First Vice-Rector

_____ / Trankovskaya L.V./
"9" июня 2025

DISCIPLINE WORK PROGRAM

Б1.О.42 Human physiology – Physiology of maxillofacial area

(name of discipline)

Specialty	**31.05.03 Dentistry for international students (in English)** (code, name)
Degree	Specialist's degree
Profile	02 "Healthcare" (in the field of providing health care in patients with dental pathology)
Mode of study	Full-time
Period of mastering the BEP	**5 years** (nominal length of study)
Department	of Human Physiology and Pathophysiology

Vladivostok, 2025

Program of the discipline **Б1.О.42 Human physiology – Physiology of maxillofacial area** is based on:
1) Federal State Educational Standard of Higher Education for the specialty approved by the Order No. 984 of Ministry of Science and Higher Education of the Russian Federation
dated August 12, 2020.

2) Curriculum for the 31.05.03 Dentistry for international students (in English), profile 02 "Healthcare" (in the field of providing health care in patients with dental pathology),
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 Human Physiology and Pathophysiology of the FSBEI HE PSMU of the Ministry of Health of Russia, under the guidance of the Head of the Department of Human Physiology and Pathophysiology, Doctor of Medical Sciences, Professor Markelova E.V.

Developed by:

Assistant professor	Candidate of Medical Sciences, Associate Professor	Sidorova O.N.
(position held)	(academic degree, academic title)	(full name)
Assistant professor	Candidate of Medical Sciences	Poleshchuk T.S.
(position held)	(academic degree, academic title)	(full name)

1. GENERAL PROVISIONS

1.1. Purpose and Objectives of Mastering Б1.О.42 Human physiology – Physiology of maxillofacial area

The purpose of mastering the discipline is developing universal and professional competencies as a future specialist by, on the basis of a system approach, acquiring modern knowledge of natural sciences in general and special (specialty) physiology, forming perception of the human body as an open self-regulating system that ensures its adaptation to the habitat.

Objectives of mastering the discipline:

1. Mastering systemic approach in the process of examining the physiological mechanisms and processes underlying the functioning of organs and systems, as well as the regulation of vital functions of the body.
2. Mastering modern methods of examination of basic physiological functions.
3. Developing physiological thinking, understand the possibilities of influencing vital processes.
4. Developing skills of assessing the state of organs and systems of the body as part of functional diagnostics.

2. DISCIPLINE AS PART OF THE BASIC EDUCATIONAL PROGRAM

Discipline **Б1.О.42 Human physiology – Physiology of maxillofacial area** is included in the mandatory part of the Unit 1 of the basic educational program for the specialty 31.05.03 Dentistry for international students (in English), profile 02 "Healthcare" (in the field of providing health care in patients with dental pathology), and is part of the 2nd and 3rd semesters' curriculum.

3. PLANNED LEARNING OUTCOMES OF THE DISCIPLINE

3.1. Mastering the discipline **Б1.О.42 Human physiology – Physiology of maxillofacial area** 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**
General Professional Competencies		
Basis of fundamental and natural science knowledge	GPC-9. 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-9_1- assesses the morphofunctional state of organs CI.GPC-9_2- distinguishes between pathological and physiological processes, identifies etiology of changes CI.GPC-9_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.42 Human physiology – Physiology of maxillofacial area**:

Types of professional activity objectives

1. *Medical*
2. *Research and development*

Kinds of professional activity objectives

1. *Examination of the patient in order to make a diagnosis*
2. *Implementation of anti-epidemic and other measures of public health protection as well as monitoring their effectiveness*

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:		**100**	**42**	**58**
Lectures (L)		20	10	10
Practical classes (C)		80	32	48
Independent work of the student (IW), including:		**53**	**30**	**23**
Electronic educational resource (EER)		22	12	10
Calculation and graphic assignments		4	2	2
Preparing for classes (CP)		18	10	8
Preparing for continuous assessment (CAP)		9	6	3
Interim assessment		27		27
Type of interim assessment	pass/fail test (T)			
	exam (E)	E		E
TOTAL: TOTAL credit value	hrs.	**180**	**72**	**108**
	credits	**5**	**2**	**3**

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.	General physiology of excitable systems	2
2.	General principles of body function regulation. Reflex theory	2
3.	Physiology of the blood system	2
4.	Physiology of the heart	2
5.	Physiology of blood circulation	2
	Hours per semester total	**10**
	Semester No. 3	
1.	Physiology of respiration	2
2.	Physiology of digestion. Digestion in the oral cavity	2
3.	Physiology of sensory systems. Sensory functions of the maxillofacial area	2
4.	Physiology of higher nervous function	2
5.	Communicative functions of the maxillofacial area	2
	Hours per semester total	**10**

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	General physiology of excitable systems. Excitation and excitability	2
2	Physiology of muscle contractions	2
3	General principles of body function regulation. Reflexes	2
4	Excitation processes in the CNS	2
5	Regulation of somatic functions	2
6	Regulation of autonomic functions	2
7	Physiology of the endocrine system	2
8	Physiology of the phosphorus-calcium metabolism	2
9	Module 1 knowledge control: “General physiology of excitable tissues and control systems of the body”	2
10	Physiology of the blood system. Respiratory function of the blood	2
11	Protective function of the blood. Physiology of the leukocyte	2
12	Physiological basis of blood coagulation and transfusion	2
13	Physiology of the heart	2
14	Examination of cardiac activity	2
15	Regulation of the cardiac activity	2
16	Summing up the semester	2
	Hours per semester total	**32**
	Semester No. 3	
1	Physiology of blood circulation	2
2	Regulation of vascular tone	2
3	Module 2 knowledge control: “Physiology of the blood system and blood circulation”	2
4	Physiology of external respiration	2
5	Regulation of respiration	2
6	Examination of external respiration	2
7	Digestion in various parts of the gastrointestinal tract	2
8	Digestion regulation	2
9	Examination of the digestive system	2
10	Physiology of metabolism and energy. Rational nutrition	2
11	Physiological basis of thermoregulation	2
12	Mechanisms of uropoiesis (urine formation)	2
13	Regulation of urine formation and excretion	2
14	Methods of excretory system examination	2
15	Module 3 knowledge control: “Physiology of respiration, digestion, metabolism, and excretion”	2
16	Visual system	2
17	Physiology of auditory and vestibular systems	2
18	Physiology of pain	2
19	Sensory functions of the maxillofacial area	2
20	Functional brain states. Physiological foundations of attention, motivations, emotions	2
21	Innate (native) and acquired (learned) behavior. Inhibition in higher nervous function	2

22	Types of higher nervous function. Signal systems	2
23	Communicative functions of the maxillofacial area	2
24	Module 4 knowledge control: “Physiology of adaptation, sensory systems, and higher nervous function”	2
	Hours per semester total	**48**

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	General physiology of excitable tissues and control systems of the body	1. Graphical comparison of excitation and excitability 2. Table of correlation of mechanical and physiological phases and electrical events of muscle contraction 3. Drawing diagrams of reflex arcs of somatic and autonomic reflexes 4. Table of physiological effects of hormones of the endocrine system 5. Preparing for practical classes and continuous assessment	15
2	Physiology of the blood system and blood circulation	1. Drawing diagrams of functional systems maintaining basic blood constants (blood mass, osmotic pressure, pH), reflex arcs of cardiac and vascular reflexes, and functional system of maintaining blood pressure 2. Preparing a library-research paper on physiological basis of blood and blood substitutes transfusion 3. Table of cardiac cycle phases 4. Drawing a graph of correlation between the processes of excitation, contraction, and excitability in the heart muscle; 5. Graphic representation of ECG; 6. Graphic representation of sphygmogram, phlebogram with analysis of basic parameters 7. Calculation of hemodynamic parameters 8. Preparing for practical classes and continuous assessment	15
	Hours per semester total		**30**
	Semester No 3		
3	Physiology of respiration, digestion, metabolism, and excretion	1. Tables of lung volumes, digestive juices, regulatory effects on digestion 2. Drawing diagrams of functional systems of respiration, nutrition, and thermoregulation; secretory and motor reflexes of the gastrointestinal tract, and the act of urination 3. Writing a library-research paper on the	12

		physiological foundations of dietetic nutrition, 4. Writing a library-research paper on hypo- and hyperthermia 5. Preparing for practical classes and continuous assessment	
4	Physiology of adaptation, sensory systems, and higher nervous function	1. Drawing diagrams of the sensory systems pathways 2. Tables of distinctive features of unconditioned and conditioned reflexes, functions of the right and left hemispheres 3. Writing reports on functional states of the brain 4. Preparing for practical classes and continuous assessment	11
	Hours per semester total		**23**

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	Избранные лекции по нормальной физиологии = Selected Lectures on Normal Physiology : учебное пособие на русском и английском языках [Электронный ресурс]	М. М. Лапкин, Е. А. Трутнева	М.: ГЭОТАР-Медиа, 2021. – 544 с. URL: http://www.studentlibrary.ru/	Unlimited access
2	Normal physiology : textbook for students' independent work = Нормальная физиология: учебник на английском языке [Электронный ресурс]	Ye.V. Dorokhov, A.V. Karpova, V.A. Semiletova et al.	М.: ГЭОТАР-Медиа, 2021. – 512 с. URL: http://www.studentlibrary.ru/	Unlimited access
3	Normal physiology: textbook [Электронный ресурс]	ed. K. V. Sudakov.	М.: ГЭОТАР-Медиа, 2022. – 728 с. 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	Cardiac physiology: учеб. пособие	Горкавая А. Ю., Климкина Т. Н., Иванова А. Ю., Полещук Т. С.	Владивосток: Медицина ДВ, 2024. - 96 с. URL: http://www.studentlibrary.ru/	Unlimited access, 38

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 (Module) 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 31.05.03 Dentistry 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
Assistance in personal growth	Overt Problem-centric debates, workshops, Olympiads, professional events (volunteers, organizers, administrators) Participation in subject and interdisciplinary Olympiads, practical skills competitions, applied science conferences and symposia Talks and problem-centric debates on topics of ethics and deontology in interactions with different categories of participants of professional activity
	Covert – creating atmosphere and infrastructure. Developing a culture of healthy lifestyle and cultivating skills aimed at preserving and improving health. Motivating students to participate in professional, research, administrative, and other kinds of professional activity. 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 (discussions/debates and talks).
	Covert – focusing on civic values-oriented position and legal awareness Development of mindful civic position during professional activity Cultivating socially-relevant characteristics and personal experience of community work.
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.
	Covert Development of environmental awareness and sustainable ecological behavior.