

FEDERAL STATE BUDGET EDUCATIONAL INSTITUTION
OF HIGHER EDUCATION
"ROSTOV STATE MEDICAL UNIVERSITY"
MINISTRY OF HEALTH OF THE RUSSIAN FEDERATION

Faculty of Education of foreign students, residents and postgraduates

CONFIRM
Supervisor
educational program

(signature) E.S. Belousova /
(FULL NAME.) 20_23



DISCIPLINE WORKING PROGRAM

NORMAL PHISIOLOGY

Speciality 31.05.01 General medicine

Form of education full-time

Rostov-on-Don
2023

I. GOALS AND OBJECTIVES OF MASTERING THE DISCIPLINE

1.1. The purpose of mastering the discipline: to promote the formation in students of systematized knowledge about the vital functions of the whole organism, the patterns of functioning of organs and the mechanisms of their regulation in interaction with each other and with environmental factors, as well as about the functional foundations of clinical, laboratory and instrumental research methods.

1.2. Objectives of studying the discipline:

- 1) formation in students of a systematic approach to understanding the physiological mechanisms that underlie interaction with environmental factors and the implementation of adaptive strategies of the human body and the implementation of normal functions of the human body from the perspective of the theory of functional systems;
- 2) students study methods and principles of research assessing the state of the body's regulatory and homeostatic systems in experiments, taking into account their applicability in clinical practice;
- 3) students study the patterns of functioning of various systems of the human body and the characteristics of intersystem interactions in the conditions of performing purposeful activities from the perspective of the doctrine of adaptation and cross-adaptation;
- 4) teaching students methods for assessing the functional state of a person, the state of regulatory and homeostatic ones in different types of purposeful activities;
- 5) nurturing feelings of humanity, instilling bioethical norms and rules in the activities of a doctor.

II. REQUIREMENTS FOR THE RESULTS OF MASTERING THE DISCIPLINE

Studying the discipline is aimed at developing competencies in
in accordance with the Federal
State Educational Standard of Higher Education and the EP of Higher Education
in this specialty:

General professional: OPK-5

III. THE PLACE OF DISCIPLINE IN THE STRUCTURE OF EP VO

3.1. The academic discipline is basic.

IV. CONTENT AND STRUCTURE OF DISCIPLINE

Labor intensity of the discipline in ze 7 hour 252

4.1. Sections of the discipline studied in the 3rd semester - 3 z, in the 4th semester - 4 z

Section number	Section name	Number of hours					
		Total	Contact work				SRO
			L	WIT H	ET C	LR	
Semester 3							
1.	Physiology of excitable tissues and intercellular interaction.	25	4		12		9
2.	Physiology of sensory functions.	28	4		15		9
3.	Nervous and hormonal regulation of physiological functions.	38	6		15		17
4.	Physiological foundations of mental activity.	12	2		3		7
5.	Milestone test control on the physiology of excitable tissues and intercellular interaction, sensory functions, regulation of physiological functions and physiological foundations mental activity.	5			3		2
Total for the semester		108	16		48		44
Interim certification form		test					
Semester 4							
6.	Physiology of the blood system.	17	2		7		8
7.	Physiology of the respiratory system.	17	2		7		8
8.	Physiology of blood and lymph circulation.	29	6		13		10
9.	Physiology of digestion, energy metabolism, thermoregulation and nutrition.	22	4		eleven		7
10.	Physiology of excretion.	17	2		7		8
eleven.	Milestone test control on the physiology of visceral systems	3			3		3
Total for the semester		91	16		48		44
Interim certification form		36	exam				
<i>Total discipline, hours:</i>		252	32		96		88

L – lectures; C – seminars; PR – practical exercises; LR – laboratory work
SRO- independent work of students.

4.2. Contact work

Lectures

Section number	No. lectures	Lecture topics	Number of hours
Semester 3			
1.	1	Physiology of excitable tissues.	2
	2	Physiology of intercellular interaction.	2
2.	3	General principles of organization of sensory systems. Physiology of somatovisceral and pain sensitivity.	2
	4	Physiology of balance, hearing and vision.	2
3.	5	Physiology of the somatic nervous system.	2
	6	Physiology of the autonomic (vegetative) nervous system.	2
	7	Physiology of the endocrine system.	2
4.	8	Physiological foundations of mental activity.	2
Total hours per semester:			16
Semester 4			
6.	9	Physiology of the blood system.	2
7.	10	Physiology of respiration.	2
8.	11	Physiology of the heart.	2
	12	Physiology of systemic and regional hemodynamics.	2
	13	Regulation of blood pressure.	2
9.	14	Physiology of digestion in the oral cavity and stomach.	2
	15	Physiology of digestion in the intestines.	2
10.	16	Physiology of the kidneys.	2
Total hours per semester:			16
<i>Total discipline, hours:</i>			32

Practical lessons

Section no. label	No. seven - bunk	Seminar topics	Number of hours	Forms of current control
Semester 3				
1.	1	Physiology of excitable tissues.	3	interview, solving situational problems
	2	Physiology of nerve and muscle cells.	3	interview, decision situational tasks
	3	Physiology of nerve and neuromuscular synapses. Physiology of nerve centers.	3	interview, solving situational problems
	4	Frontier control by module: Physiology of excitable tissues and intercellular interaction.	3	test control, written survey, oral survey, solving situational problems.
2.	5	General principles of analyzer organization. Physiology of smell and taste.	3	interview, solving situational problems
	6	Physiology of somatovisceral sensitivity. Physiology of pain.	3	interview, solving situational problems
	7	Physiology of balance and hearing.	3	interview, solving situational problems
	8	Physiology of vision.	3	interview, solving situational problems
	9	Frontier control by module: "Physiology of sensory functions"	3	test control, written survey, oral survey, solving situational problems.
3.	10	Functions of the spinal cord, brain stem and cerebellum.	3	interview, solving situational problems
	eleven	Functions of the striopallidal system, limbic system and neocortex.	3	interview, decision situational tasks
	12	Physiology of the autonomic (vegetative) nervous system.	3	interview, decision situational tasks
	13	Physiology of the endocrine system. Endocrine functions of the hypothalamus and pituitary gland. Particular physiology of the endocrine system.	3	interview, solving situational problems
	14	Frontier control by module: "Nervous and hormonal regulation of physiological functions."	3	test control, written survey, oral survey, solving situational problems.
4.	15	Physiology of instincts and conditioned reflexes. Physiology of memory, sleep, motivation and emotions.	3	interview, solving situational problems

Sect ion no. la	No. seven - bunk	Seminar topics	Numbe r of hours	Forms of current control
5.	16	Interim control on the physiology of excitable tissues and intercellular interaction, sensory functions, regulation of physiological functions and physiological foundations mental activity.	3	test control.
Total by semester hours			48	
Semester 4				
6.	1	Physiology of the blood system. Laboratory methods for blood testing.	3	interview, solving situational problems
	2	Physiology of blood groups and hemostasis system.	3	interview, solving situational problems
7.	3	Physiology of external respiration. Methods for studying external respiration.	3	interview, solving situational problems
	4	Regulation of external respiration.	3	interview, solving situational problems
	5	Physiology of the heart. Methods for studying the heart.	3	interview, solving situational problems
	6	Physiology of systemic and regional hemodynamics. Measurement methods blood pressure and pulse.	3	interview, solving situational problems
	7	Regulation of the heart.	3	interview, solving situational problems
	8	Regulation of blood pressure.	3	interview, solving situational problems
8.	9	Frontier control by module: “Physiology of blood, respiratory, circulatory and lymphatic systems.”	3	test control, test work.
9.	10	Physiology of digestion in the oral cavity and stomach.	3	interview, decision situational tasks
	elev en	Physiology of digestion in the intestines.	3	interview, decision situational tasks
	12	Physiology of energy metabolism, thermoregulation and nutrition.	3	interview, decision situational tasks
10.	13	Physiology of the kidneys. Laboratory methods for urine examination.	3	interview, decision situational tasks
	14	Regulation of urine formation and excretion.	3	interview, decision situational tasks

Section no. la	No. seven - bunk	Seminar topics	Number of hours	Forms of current control
	15	Frontier control by module: "Physiology of digestion, energy metabolism, thermoregulation, nutrition and excretion."	3	test control, written survey, oral survey, solving situational problems.
elevation.	16	Interim control on the physiology of visceral systems.	3	test control.
Total hours per semester			48	
<i>Total hours discipline:</i>			96	

4.3. Independent work of students

Section number	Type of independent work of students	Number of hours	Forms of current control
Semester 3			
1.	Preparation for ongoing control on control tasks and situational tasks; preparation for testing.	9	test control, survey
2.	Preparation for current control on control assignments and situational tasks; preparation for testing.	9	test control, survey
3.	Preparation for current control on control assignments and situational tasks; preparation for testing.	17	test control, survey
4.	Preparation for ongoing control on control tasks and situational tasks; preparation for testing.	7	test control, survey
5.	Preparing for testing.	2	test control.
Total hours per semester		44	
Semester 4			
6.	Preparation for ongoing control on control tasks and situational tasks; preparation for testing.	8	test control, survey
7.	Preparation for ongoing control on control tasks and situational tasks; preparation for testing.	8	test control, survey
8.	Preparation for ongoing control on control tasks and situational tasks; preparation for testing.	10	test control, survey
9.	Preparation for ongoing control on control tasks and situational tasks; preparation for testing.	7	test control, survey

No. section	Type of independent work of students	Number of hours	Forms of current control
10.	Preparation for ongoing control on control tasks and situational tasks; preparation for testing.	8	test control. survey
eleven.	Preparing for testing.	3	test control
Total hours per semester		44	
<i>Total hours discipline:</i>		88	

V. ASSESSMENT MATERIALS FOR CURRENT CONTROL AND INTERMEDIATE CERTIFICATION

(are an appendix to the work program).

VI. EDUCATIONAL AND METHODOLOGICAL SUPPORT OF DISCIPLINE

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6.1. Printed publications

1. Human physiology: textbook / ed. V.M. Pokrovsky, G.F. Briefly. - M.: Medicine, 2011. - 661 p.
2. Normal physiology: a textbook for students. universities / ed. K.V. Sudakova, V.V. Andrianov, Yu.E. Vagin. - M.: GEOTAR-MEDIA, 2012. – 875 p.
3. Kamkin A.G. Atlas of physiology: textbook. manual T.1: in 2 volumes / A.G. Kamkin, I.S. Kiseleva. – M.: GEOTAR-Media, 2012. – 443 p.
4. Kamkin A.G. Atlas of physiology T. 1: textbook. manual: in 2 volumes / A.G. Kamkin, I.S. Kiseleva. – M.: GEOTAR-MEDIA, 2010. – 404 p.
5. Nozdrachev A.D. Normal physiology: textbook: [for graduate students, residents and students of medical universities] - Moscow: GEOTAR-Media, 2021. - 1087 p.
6. Physiology in figures and tables: questions and answers: textbook. allowance for medical universities / ed. V.M. Smirnova. - M.: MIA, 2007. – 457 p.
7. Human physiology: atlas of dynamic schemes: textbook. manual for university students / K.V. Sudakov, V.V. Andrianov, Yu.E. Vagin [etc.]; edited by K.V. Sudakova. – M.: GEOTAR-Media, 2015. – 416 p.
8. Large workshop on human and animal physiology: textbook. aid for students universities: in 2 volumes / ed. HELL. Nozdracheva. – M.: Academy, 2007. T.1 – 608 p.
9. Large workshop on human and animal physiology: textbook. aid for students universities: in 2 volumes / ed. HELL. Nozdracheva. – M.: Academy, 2007. T. 2 – 644 p.
10. Chesnokova S.A. Atlas of normal physiology: textbook. allowance for medical universities / S.A. Chesnokova, S.A. Shastun; edited by ON THE. Agadzhanian. - M.: MIA, 2007. – 496 p.
11. Modern course of classical physiology. Selected lectures / ed. Yu.V. Natochina, V.A. Tkachuk. – M.: GEOTAR-Media, 2007. 384 p.
12. Lapkin M. M. Selected Lectures on Normal Physiology: textbook in Russian and English - Moscow: GEOTAR-Media, 2021. - 540, [1] p. : ill. - (Tutorial) (Textbook).

6.2. Internet resources

ELECTRONIC EDUCATIONAL RESOURCES		Access to the resource
1.	Electronic library Rost State Medical University.– http://109.195.230.156:9080/opac/	URL: Access is not limited
2.	Student advisor: EBS. – Moscow: LLC “IPUZ”. http://www.studmedlib.ru	- URL: Access is not limited
3.	National Electronic Library. - URL: http://neb.rf/	Access from computers libraries
4.	ScienceDirect. Freedom Collection [journals] / Elsevier. www.sciencedirect.com by IP addresses of RostSMU. (National project)	– URL: Access is not limited
5.	Federal Electronic Medical Library of the Ministry of Health Russia. - URL: http://www.femb.ru/feml/ , http://feml.scsml.rssi.ru	Open access
6.	Free Medical Books . - URL: http://www.freebooks4doctors.com/	Open access
7.	Med-Edu.ru: medical video portal. - URL: http://www.med-edu.ru/	Open access

6.3. Guidelines for students on mastering the discipline

1. Educational and methodological allowance practical classes
by normal physiology / ed. Ya.A. Khananashvili. – Rostov n/d: Publishing house of Rostov State Medical University, 2010. - 150 p.

2. Khananashvili Y.A. Lectures on the physiology of regional blood circulation / Ya.A. Khananashvili. – Rostov n/d: Publishing house of Rostov State Medical University, 2009. – 88 p.

VII. MATERIAL AND TECHNICAL SUPPORT OF DISCIPLINE

No.	Name
1.	Personal computers
2.	Presentations, sets of slides, tables, multimedia visual materials on various sections of the discipline.
3.	Multimedia complex (laptop, projector, screen)
4.	Dissection set of instruments, laboratory glassware
5.	Electrical stimulators
6.	Thermometers
7.	Forster perimeters
8.	Olfactometers
9.	Barani chair
10.	Wrist and finger dynamometers
11.	Neurological hammers
12.	Questionnaires to determine individual typological personality traits
13.	Set of red blood cells and zoliclones
14.	Electrocardiographs
15.	Tonometers

16.	Phonendoscopes
17.	Heart Rate Monitors
18.	Spirometers
19.	Spirograph

20.

Pneumotachometers