MINISTRY OF EDUCATION AND SCIENCE OF THE RUSSIAN FEDERATION,
MINISTRY OF EDUCATION AND SCIENCE OF THE KYRGYZ REPUBLIC

Government-run Educational institution of Higher Professional Education
Kyrgyz-Russian Slavic University
School of Medicine

ENDORSED BY
Prof Anes Zarifyan
"__15__" 09 ____2015y

Normal physiology

Course Outline (Module)

Assigned to — Normal and pathological physiology
Academic Curriculum — 31050150_15_13ld. pli . xml
31.05.01. General medicine

Mode of Study — **Intramural**
Total Credit Value — **7 credit point**

Course Hours — 252
including:
in-class learning — 198
individual work — 36
exams — 18

Scope of Testing Semesters:
exams 4
credits 3

Course Hours Scheduling (per semester)						
Semester Academic Year	**1 (1.1)**		**2(1.2)**		Total	
Weeks	18,7		18			
Type of Traning	AC	CO	AC	CO	AC	CO
Lectures	36	36	36	36	72	72
Lab Practical	54	54	72	72	126	126
Including Interactive	4	4	5	5	9	9
Total In-class Session	90	90	108	108	198	198
Individual Work	90	90	108	108	198	198
Individual Work	18	18	18	18	36	36
Face-to-face Learning			18	18	18	18
Total	108	108	144	144	152	252

The Course outline developed by:
PhD, Associate Professor Kalugina O,P.,PhD, Associate Proffesor Makimbetova Ch., E

Reviewers:
MD, Prof. Kononets I.E., MD, Prof. Tuhvatshin R.R
The Course Outline
Normal physiology

developed in full compliance with FSES 3+:

Federal State Education Standards of Higher Professional Education for students trained for specialty 31.05.01 (The Ministry of Education and Science of the Russian Order of "09" 02 2016 №95)

in accordance with Academic Curriculum: 31.05.01
confirmed by KRSU Board of Academics in "29"09 2015г. record № 2.

The Course Outline endorsed by Normal and pathological physiology Department Meeting

Record of 14.09. 2015 г. № 2
Valid for: 2015-2021 academic year
The Head of Department

The course outline endorsed for the following academic year

Chairman of the Educational and Methodological Board
8.09 2016 year.

The course outline has been revised, considered and endorsed for implementation
in 2016 – 2017 Academic Year at the Staff Meeting of Normal and pathological physiology Department

Record of 8. 09 2016 year. № 2
The Head of Department Prof Anes Zarifyan

The course outline endorsed for the following academic year

Chairman of the Educational and Methodological Board
8.09 2017 year.

The course outline has been revised, considered and endorsed for implementation
in 2017 – 2018 Academic Year at the Staff Meeting of Normal and pathological physiology Department

Record of 8. 09 2017 year. № 7
The Head of Department Prof Anes Zarifyan

The course outline endorsed for the following academic year

Chairman of the Educational and Methodological Board
8.09 2018 year.

The course outline has been revised, considered and endorsed for implementation
in 2017 – 2018 Academic Year at the Staff Meeting of Normal and pathological physiology Department

Record of 8. 09 2018 year. № 2
The Head of Department Prof Anes Zarifyan

The course outline endorsed for the following academic year

Chairman of the Educational and Methodological Board
04.09 2019 year.

The course outline has been revised, considered and endorsed for implementation
in 2019 – 2020 Academic Year at the Staff Meeting of Normal physiology Department

Record of 26. 08 2019 year. № 1
The Head of Department Prof Anes Zarifyan

The course outline endorsed for the following academic year

Chairman of the Educational and Methodological Board
23.09 2020 year.

The course outline has been revised, considered and endorsed for implementation
in 2020 – 2021 Academic Year at the Staff Meeting of Normal physiology Department

Record of 27. 08 2020 year. № 1
The Head of Department Prof Anes Zarifyan

The course outline endorsed for the following academic year

Chairman of the Educational and Methodological Board
09.09 2021 year.

The course outline has been revised, considered and endorsed for implementation
in 2021 – 2022 Academic Year at the Staff Meeting of Normal physiology Department

Record of 23. 08 2021 year. № 1
The Head of Department Prof Anes Zarifyan

The course outline endorsed for the following academic year

Chairman of the Educational and Methodological Board
29.09 2022 year.

The course outline has been revised, considered and endorsed for implementation
in 2022 – 2023 Academic Year at the Staff Meeting of Normal physiology Department

Record of 26. 08 2022 year. № 1
The Head of Department Kurmashev R.A.

The course outline endorsed for the following academic year

Chairman of the Educational and methodological board
29.09.2023 year

The course outline has been revised, considered and endorsed for implementation
In 2023-2024 Academic year at the staff meeting of Normal physiology department

Record of 28.08.2023 year. № 1
The Head of Department Kurmashev R.A.

1. COURSE OUTLINE OBJECTIVES
form the students knowledge about the system of vital activity of the holistic organism and its separate parts, on the basic laws of functioning and mechanisms of regulation when communicating among themselves and with external factors of the environment, about the physiological fundamentals of clinical and physiological research methods applied in functional diagnosis and when exploring integrative activity of the person.

2. PLACE OF THE COURSE IN THE EDUCATIONAL PROGRAM	
Educational Program Units:	B1 B
2.1	**Students' Preliminary Training Requirements:**
2.1.1	**Anatomy**
2.1.2	**Biology**
2.1.3	**Latin language**
2.1.4	**Chemistry**
2.1.5	**Physics, mathematics**
2.1.6	**Histology, embryology, cell biology**
2.2	**Course Units and Practical Sessions imposing the prior Proficiency**
2.2.1	Physiopathology, clinical pathophysiology
2.2.2	Immunologia
2.2.3	Pharmacology
2.2.4	Pathological anatomy, clinical pathologic Anatomy

3. STUDENTS' COMPETENCIES RESULTING FROM THE COURCE UNIT (MODULE)	
DIC-9: ability to assess the morphological, physiological States and pathological processes in the human body for solving professional tasks.	
Knowledge:	
Level 1	the main function of cells, tissues, organs and body systems.
Level 2	basic properties of cells, tissues and organs and their quantitative characteristics.
Level 3	mechanisms of regulation of the activities of cells, tissues, organs and systems, also the organism in its interaction with the environment.
Skills:	
Level 1	use this knowledge to understand the functions of various organs and systems of holistic organism of a healthy person.
Level 2	use knowledge of peculiarities of functioning of cells, tissues, organs and systems of a healthy organism.
Level 3	use knowledge about the mechanisms of formation of specific and integrative functions, their dependence on external environment and State body to obtain useful Adaptive outcome.
Expertise:	
Level 1	possess basic skills training literature and laboratory equipment.
Level 2	own evaluation methods of functional condition of a healthy body
Level 3	own methods for interpreting the results.

Final Students' Competences

3.1	**Knowledge:**
3.1.1	Structural and functional properties and features of regulation processes of the contraction the striated and smooth muscles. The role of the various divisions and structures of the CENTRAL NERVOUS SYSTEM in the regulation of somatic and visceral bodily functions. Reflex arc with visceral and somatic components. The system of blood and its role in the maintenance and regulation of homeostatic organism constants, function, blood characteristics and features of physiological constants blood; blood group, rhesus factor and its role in pathology, blood transfusion rules, mechanisms of hemostasis. Milestones and indicators external respiratory function, respiratory center and its structure. Digestion as the process required to implement energy and plastic body functions; peculiarities and regularities of structural and functional organization of the functions of the gastrointestinal tract, the formation of hunger and satiation. Basic processes and mechanisms of maintaining body temperature constancy. The basic stages of education urine and their regulation. The major homeostatic functions of the kidneys. Basic properties of heart muscle and their differences from skeletal muscles,

	electromechanical coupling mechanisms, cavities and valvular heart device. Cardiac cycle, the basic mechanisms of regulation of cardiac activity. the principle of the calculation of energy consumption method of indirect calorimetry. Characteristics of Microcirculation, transcapillar exchange and its regulation. The basic morpho-functional peculiarities of the various divisions of sensor systems. Forms of manifestation of the higher nervous activity (GNI) in humans, classification and characterization of types of GNI. Formation mechanisms of a conditioned reflex and its braking role in clinical practice, functional behavioral system components of the Act. The concept and classification of pain; features of morpho-functional organization of the nociceptive and antinociceptive systems.
3.2	**Skills:**
3.2.1	Analyze: manifestations of blood functions; peculiarities of the different phases of respiration and their regulation; especially the higher nervous activity of man. Conduct research: coagulation system, evaluation of blood groups and rhesus factor; Basic physiological properties of excitable tissues; reflex activity of the nervous system and Autonomic reactivity; functions of sensory systems; pain sensitivity; individually-typological characteristics of the person; performance of somatic and visceral systems (respiratory, cardiovascular) at different functional States of the organism.
3.3	**Expertise:**
3.3.1	Methods: determination of blood group and rhesus factor; evaluation of the results of the common blood; evaluation of coagulation time; evaluation of sustainability of erythrocyte osmotic; counting erythrocytes and leukocytes; evaluation of the results of the General urine analysis; palpation of pulse; measuring blood pressure; Auscultation of the heart tones; Spirometry, pikfloumetrii; estimating basal metabolic rate and degree of deviation; evaluate types of HNA.

4. COURSE (MODULE) STRUCTURE AND CONTENT

Class Code	Subject Name /Type of Class/	Semester / Academic Year	Hours	Competencies	Literature	Interactive Sessions	Notes
	Section 1. Internal Environment. Physiology of blood.Humoral regulation.						
1.1	The introduction of a live system properties. Homeostasis. The basic principles of regulation of functions, self-regulation. The composition and functions of the blood. /Lek/	3	2	CPC-9	L l l 1.2 1.1 2.1	0	
1.2	The introduction of a live system properties. Homeostasis. the basic principles of regulation of functions, self-regulation. The composition and functions of blood./Pract	3	3	CPC-9	L l l 1.2 1.1 2.1 3.1 l	0	
1.3	Physico-chemical properties of blood. /Pract/	3	3	CPC-9	L l l 1.2 1.1 2.1 3.1 l	0	
1.4	Red blood cells (erythrocytes, leukocytes, platelets)./Pract/	3	3	CPC-9	L l l 1.2 1.1 2.1 3.1 l	0,5	Computer simulation of laboratory works: definition of hematocrit, calculation of quantity of hemoglobin FEC method, erythrocyte sedimentation rate

							determination
1.5	Blood clotting. Antigenic blood system. /Pract	3	3	CPC-9	L l l 1.2 1.1 2.1 3.1 l	0,5	Computer simulation of laboratory works: defining blood groups by using the coliklon anti-A and anti-B; Rhesus accessories and using anti-D coliklon .
1.6	Humoral regulation system, endocrine function. Local self-regulation (metabolites, BAS).Hormonal regulation system. /Pract	3	3	CPC-9	L l l 1.2 1.1 2.1 l 2.2	0	
1.7	Physico-chemical properties of blood. /Lek/	3	2	CPC-9	L l l 1.2 1.1 2.1	0	
1.8	Blood cells. /Lek/	3	2	CPC-9	L l l 1.2 1.1 2.1	0	
1.9	Blood clotting. Antigenic blood system. /Lek/	3	2	CPC-9	L l l 1.2 1.1 2.1	0	
1.10	Humoral regulation system, endocrine function. Local self-regulation(metabolites,BAS). Hormonal regulation system. /Lek/	3	2	CPC-9	L l l 1.2 1.1 2.1 l 2.2	0	
1.11	Physico-chemical properties of blood. /I.W./	3	1	CPC-9	L 1.1 1.2 l l l l 3.1 2.1 2.10	0	Read the tutorial and advanced Rd literature.Working with outstanding lectures. Composition determination tables "Homeostatic clinical parameters of blood."
1.12	Red blood cells (erythrocytes, leukocytes, platelets). /I.W/	3	1	CPC-9	L 1.2 l 1.1 l l l 3.1 2.1 2.10	0	Reading the textbook, advanced Rd literature. Working with outstanding lectures. Composition determination tables "Homeostasis of blood. Part 2.

							Draw diagrams of the structure of blood cells.
1.13	Blood clotting. Antigenic blood system. /I.W/	3	1	CPC-9	L 1.1 1.2 l l l l 3.1 2.1 2.10	0	Reading the textbook, advanced Rd literature. Working with outstanding lectures. Composition determination scheme of hemostasis. G rafting tables "Blood group ABO system"
1.14	Humoral regulation system, endocrine function. Local self-regulation (metabolites, BAS).Hormonal regulation system. /I.W/	3	2	CPC-9	L 1.1 1.2 l l l 2.10 2.1 l 2.2	0	Reading the textbook, advanced Rd literature. Working with outstanding lectures. Charting self-regulation endocrine gland activity.
	Section 2. General Physiology of excitable structures						
2.1	Biomembranes. Transport of substances, excitability, measure./Lek/	3	2	CPC-9	L l l 1.2 1.1 2.1	0	
2.2	Biomembranes. Transport of substances, excitability. /Pract/	3	3	CPC-9	L l l 1.2 1.1 2.1 l 3.2	0	
2.3	Their biological characteristics. Characteristics of excitation. /Pract	3	3	CPC-9	L l l 1.2 1.1 2.1 l 3.2	0	
2.4	Physiology of nerves and synapses. /Pract/	3	3	CPC-9	L l l 1.2 1.1 2.1 l 3.2	1	Computer simulation of excitation transfer mechanism in neuro-muscular synapse; laws of the conduction of excitation to the nerves.
2.5	Physiology of muscle (skeletal and smooth muscles). /Pract	3	3	CPC-9	L l l 1.2 1.1 2.1 l 3.2	1	Computer simulation of biomechanics of muscle contraction and relaxation

							modes (single, tetanus, contracture) and types of contraction (isometric and isotonic)
2.6	Their biological characteristics. Characteristics of excitation. /Lek/	3	2	CPC-9	L l l 1.2 1.1 2.1	0	
2.7	The physiology of nerve synapses. /Lek/	3	2	CPC-9	L l l 1.2 1.1 2.1	0	
2.8	Physiology of muscle tissue (smooth and skeletal muscle)./Lek/	3	2	CPC-9	L l l 1.2 1.1 2.1	0	
2.9	Biomembranes. Transport of substances, excitability. /I.W/	3	1	CPC-9	L 1.1 1.2 l l l l 3.2 2.1 2.10	0	Reading the textbook, advanced Rd literature. Working with outstanding lecture. Scheme the composition structure of biomembranes . Summarize of the text.
2.10	Their biological characteristics. Characteristics of excitation. /I.W/	3	1	CPC-9	L 1.1 1.2 l l l l 3.2 2.1 2.10	0	Reading the textbook, advanced Rd literature. Working with outstanding lectures. Chart electrical processes of the biomembrane. Draw the graphs of AP and changes in excitability when excited.
2.11	Physiology of nerves and synapses. /I.W/	3	1	CPC-9	L 1.1 1.2 l l l l 3.2 2.1 2.10	0	Reading the textbook, advanced Rd literature.Working with outstanding lectures.Draw diagrams of the structure of nerve fibres and conduction of excitation; synapse

							structure. Summarize of the text.
2.12	Physiology of muscle (skeletal and smooth muscles)./I.W/	3	1	CPC-9	L 1.1 1.2 l l l l 3.2 2.1 2.10	0	Reading the textbook, advanced Rd literature. Working with outstanding lectures..Draw a diagram of the structure of the muscle fibers. Summarize of the text
	Section 3. CNS. Physiology and function of sensory systems.						
3.1	Reflex as a principle of organization of physiological functions. Inhibition in the CNS. Properties of nerve centres. /Lek/	3	2	CPC-9	L l l 1.2 1.1 2.1	0	
3.2	Reflex as a principle of organization of physiological functions. Inhibition in the CNS/Pract/	3	3	CPC-9	L l l 1.2 1.1 2.1	0.5	Role-playing game "Reflex arc
3.3	Properties of nerve centers. Integration and coordination in the central nervous system. Spinal cord./Pract/	3	3	CPC-9	L l l 1.2 1.1 2.1	0	
3.4	The medulla oblongata. The midbrain. Reticular formation. /Pract/	3	3	CPC-9	L l l 1.2 1.1 2.1	0	
3.5	The cerebellum. Diencephalon. The limbic system. /Pract/	3	3	CPC-9	L l l 1.2 1.1 2.1	0.5	Role-playing game "Symptoms of abnormalities in the cerebellum"
3.6	Basal ganglia, cerebral cortex/Pract/	3	3	CPC-9	L l l 1.2 1.1 2.1	0	
3.7	Reflex regulation of somatic and vegetative functions. /Pract/	3	3	CPC-9	L l l 1.2 1.1 2.1	0	
3.8	Functions of sensory systems. General Physiology. /Pract/	3	3	CPC-9	L l l 1.2 1.1 2.1 l 2.3	0	
3.9	Visual and auditory system to another. /Pract/	3	3	CPC-9	L l l 1.2 1.1 2.1 l 2.3	0	
3.10	Somatovisceral, gustatory, olfactory system. /Pract/	3	3	CPC-9	L l l 1.2 1.1 2.1 l 2.3	0	
3.11	Physiology of nerves and synapses. /I.W	3	2	CPC-9	L l l 1.2 1.1 2.1	0	
3.12	Midbrain.. Cerebellum.	3	2	CPC-9	L l l 1.2	0	

	Diencephalon. /Lek/				1.1 2.1		
3.13	The limbic system. Basal ganglia, cerebral cortex/Lek/	3	2	CPC-9	L l l 1.2 1.1 2.1	0	
3.14	Reflex regulation of somatic and vegetative functions. /Lek	3	2	CPC-9	L l l 1.2 1.1 2.1	0	
3.15	Functions of sensory systems. General Physiology. /Lek/	3	2	CPC-9	L l l 1.2 1.1 2.1 l 2.3	0	
3.16	Visual and auditory system to another. /Lek/	3	2	CPC-9	L l l 1.2 1.1 2.1 l 2.3	0	
3.17	Gustatory, olfactory, vestibular system. /Lek/	3	2	CPC-9	L l l 1.2 1.1 2.1 l 2.3	0	
3.18	Somato-visceral. Nociceptive and antinociceptive reception/Lek/	3	2	CPC-9	L l l 1.2 1.1 2.1 l 2.3	0	
3.19	Reflex as a principle of organization of physiological functions. Inhibition in the CNS/I.W/	3	1	CPC-9	L 1.1 1.2 l l l 2.10 2.1	0	Reading the textbook, advanced Rd literature. Working with outstanding lectures.Draw diagrams of the structure of a neuron, reflex arc, types of inhibition.
3.20	Properties of nerve centers. Integration and coordination in the central nervous system. Spinal cord./I.W/	3	1	CPC-9	L 1.1 1.2 l l l 2.10 2.1	0	Reading the textbook, advanced Rd literature. Working with outstanding lectures. Draw diagrams divergence, convergence, feedbacks.
3.21	Medulla oblongata. The midbrain. Reticular formation. /I.W/	3	1	CPC-9	L 1.1 1.2 l l l 2.10 2.1	0	Reading the textbook, advanced Rd literature. Working with outstanding lectures. Summarize of the text.
3.22	The cerebellum. Diencephalon. The limbic system. /I.W/	3	1	CPC-9	L 1.1 1.2 l l l 2.10 2.1	0	Reading the textbook, advanced Rd literature.Working with outstanding lectures.

							Summarize of the text
3.23	Basal ganglia, cerebral cortex/I.W/	3	1	CPC-9	L 1.1 1.2 l l l 2.10 2.1	0	Reading the textbook, advanced Rd literature.Working with outstanding lectures.Summarize of the text.
3.24	Reflex regulation of somatic and vegetative functions./I.W/	3	1	CPC-9	L 1.1 1.2 l l l 2.10 2.1	0	Reading the textbook, advanced Rd literature. Working with outstanding lectures. Draw scheme autonomic reflex arcs. Summarize of the text.
3.25	Functions of sensory systems. General Physiology. /I.W/	3	1	CPC-9	L 1.1 1.2 l l l l 2.3 2.1 2.10	0	Reading the textbook, advanced Rd literature. Working with outstanding lectures. Summarize of the text.
3.26	Visual and auditory system to another. /I.W/	3	1	CPC-9	L 1.1 1.2 l l l l 2.3 2.1 2.10	0	Reading the textbook, advanced Rd literature.Working with outstanding lectures. Summarize of the text.
3.27	Somato-visceral. Gustatory, olfactory system. /I.W/	3	1	CPC-9	L 1.1 1.2 l l l l 2.3 2.1 2.10	0	Reading the textbook, advanced Rd literature.Working with outstanding lectures.Summarize of the text.
3.28	/Standings/	3	0	CPC-9			
	Section 4. Physiology of blood circulation and lymph circulation						
4.1	Physiological properties of the myocardium are automaticity, conductivity.	4	2	CPC-9	L l l 1.2 2.4 1.1	0	

	/Lek/						
4.2	Physiological properties of heart muscle. Automaticity, conductivity. /Pract/	2	4	CPC-9	L l l 1.2 2.4 1.1	0.5	Computer simulation of the experience of the Stanniusa.
4.3	Excitability, contractility. /Pract/	4	4	CPC-9	L l l 1.2 2.4 1.1	0	
4.4	Phase analysis of cardiac cycle. Symptoms of cardiac activity. /Pract/	4	4	CPC-9	L l l 1.2 2.4 1.1	0.5	Computer simulation of cardiac cycle.
4.5	The main regularities of hemodynamics. /Pract/	4	4	CPC-9	L 1.1 l 1.2 l 2.5	1	Parsing "limit factors turning the intermittent blood flow in a continuous"; The impact of various factors on the level of pressure in the CVS on the example of open models Weber"
4.6	The characteristic movement of blood through the vessels. /Pract/	4	4	CPC-9	L 1.1 l 1.2 l 2.5	0	
4.7	Mechanisms of regulation of the circulatory system. /Pract/	4	4	CPC-9	L l l 1.2 2.4 1.1	0.5	Computer simulation of the influence of various substances on heart function and action of the vagus and sympathetic nerve on the heart
4.8	Especially the regional hemodynamics. /Pract/	4	4	CPC-9	L 1.1 l 1.2 l 2.5	0	
4.9	Excitability, contractility /Lek/	4	2	CPC-9	L l l 1.2 2.4 1.1	0	
4.10	Phase analysis of cardiac cycle. Symptoms of cardiac activity. /Lek/	4	2	CPC-9	L l l 1.2 2.4 1.1	0	

4.11	The main regularities of hemodynamics. /Lek/	4	2	CPC-9	L 1.1 l 1.2 l 2.5	0	
4.12	The characteristic movement of blood through the vessels. /Lek/	4	2	CPC-9	L 1.1 l 1.2 l 2.5	0	
4.13	Mechanisms of regulation of the circulatory system. /Lek/	4	2	CPC-9	L l l 1.2 2.4 1.1	0	
4.14	Especially the regional hemodynamics. /Lek/	4	2	CPC-9	L 1.1 l 1.2 l 2.5	0	
4.15	Physiological properties of heart muscle. Automaticity, conductivity /I.W/	4	0.5	CPC-9	L 1.1 1.2 l l l 2.4 2.10	0	Reading the textbook, advanced Rd literature. Working with outstanding lectures. Draw scheme circles of circulation of the blood, the structure of the heart, its conduction system.
4.16	Excitability, contractility /I.W/	4	0.5	CPC-9	L 1.1 1.2 l l l 2.4 2.10	0	Reading the textbook, advanced Rd literature.Working with outstanding lectures.Draw the graphs of the AP, typical and atypical of the myocardium.
4.17	Phase analysis of cardiac cycle. Symptoms of cardiac activity. /I.W/	4	1	CPC-9	L 1.1 1.2 l l l 2.4 2.10	0	Reading the textbook, advanced Rd literature. Working with outstanding lectures. Draw diagrams cardiac cycle, ECG. Summarize of the text.

4.18	The main regularities of hemodynamics. /I.W/	4	1	CPC-9	L 1.1 1.2 l l l 2.10 2.5	0	Reading the textbook, advanced Rd literature.Working with outstanding lectures. Summarize of the text. Draw diagrams of resistance, pressure and blood flow velocity in the course of the VS.
4.19	The characteristic movement of blood through the vessels. /I.W/	4	1	CPC-9	L 1.1 1.2 l l l 2.10 2.5	0	Reading the textbook, advanced Rd literature. Working with outstanding lectures. Summarize of the text. Draw a diagram Starling.
4.20	Mechanisms of regulation of the circulatory system. /I.W/	4	1	CPC-9	L 1.1 1.2 l l l l 2.4 2.5 2.10	0	Reading the textbook, advanced Rd literature. Working with outstanding lectures. Summarize of the text. Draw diagrams of the reflex arc of regulation of circulation of the blood.
4.21	Especially the regional hemodynamics. /I.W/	4	2	CPC-9	L 1.1 1.2 l l l 2.10 2.5	0	Reading the textbook, advanced Rd literature.Working with outstanding lectures.
	Section 5. Physiology of respiration, metabolism, thermoregulation, power allocation						

5.1	External breathing. Mechanisms of inhalation and exhalation. Gaseous exchange in the lungs, factors. Pulmonary volumes and capacities. /Pract/	4	4	CPC-9	L 1.1 l 1.2 l 2.6	0.5	Parsing "Change intrapleural pressure when breathing on a model Donders"; "Changing quantities of elastic draught of the lungs by breath"
5.2	Transport of gases in blood. Gaseous Exchange in tissues. Regulation of breath. Hypo- and hyperbaria. Hypoxia. Mountain sickness/Pract/	4	4	CPC-9	L 1.1 l 1.2 l 2.6	0	
5.3	Exchange energy. The basic Exchange. Thermoregulation..Nutrition Physiology. /Pract/	4	4	CPC-9	L l 1.1 1.2	0	
5.4	Kidney function. Mechanisms of uropoiesis. Regulation of filtration and reabsorption. /Pract/	4	4	CPC-9	L 1.1 l 1.2 l 2.7	0.5	Computer simulation of processes of uropoiesis.
5.5	Part of the kidneys in maintaining homeostasis of the organism. /Pract/	4	4	CPC-9	L 1.1 l 1.2 l 2.7	0	
5.6	External breathing. Mechanisms of inhalation and exhalation. Gaseous exchange in	4	2	CPC-9	L 1.1 l 1.2 l 2.6	0	

	the lungs, factors. Pulmonary volumes and capacities. /Lek/						
5.7	Transport of gases in blood. Gaseous Exchange in tissues. Regulation of breath. Hypo- and hyperbaria. Hypoxia. Mountain sickness. /Lek/	4	2	CPC-9	L 1.1 l 1.2 l 2.6	0	
5.8	Exchange energy. The Exchange. Thermoregulation.Nutrition Physiology /Lek/	4	2	CPC-9	L l 1.1 1.2	0	

5.9	Kidney function. Mechanisms of uropoiesis. Regulation of filtration and reabsorption. /Lek/	4	2	CPC-9	L 1.1 l 1.2 l 2.7	0	
5.10	Part of the kidneys in maintaining homeostasis of the organism. /Lek/	4	2	CPC-9	L 1.1 l 1.2 l 2.7	0	
5.11	External breathing. Mechanisms of inhalation and exhalation. Gaseous exchange in the lungs, factors. Pulmonary volumes and	4	1	CPC-9	L 1.1 1.2 l l l 2.10 2.6	0	Reading the textbook, advanced Rd literature.Working with outstanding lectures. Summarize of the text.

	capacities. /I.W/						
5.12	Transport of gases in blood. Gaseous Exchange in tissues. Regulation of breath. Hypo- and hyperbaria. Hypoxia. Mountain sickness/I.W/	4	1	CPC-9	L 1.1 1.2 l l l 2.10 2.6	0	Reading the textbook, advanced Rd literature. Working with outstanding lectures. Summarize of the text. Draw reflex arcs own respiratory reflexes.
5.13	Exchange energy. The basic Exchange. Thermoregulation .Nutrition Physiology. /I.W/	4	1	CPC-9	L l 1.1 1.2 l 2.10	0	Reading the textbook, advanced Rd literature.Working with outstanding lectures. Summarize of the text.
5.14	Kidney function. Mechanisms of uropoiesis. Regulation of filtration and reabsorption. /I.W/	4	1	CPC-9	L 1.1 1.2 l l l 2.10 2.7	0	Reading the textbook, advanced Rd literature. working with outstanding lectures. Summarize of the text. Draw a diagram of the structure of the nephron.
5.15	Part of the kidneys in maintaining homeostasis of the organism. /I. W/	4	1	CPC-9	L 1.1 1.2 l l l 2.10 2.7	0	Reading the textbook, advanced Rd literature.Working with outstanding lectures.Draw a diagram of ADH and aldosterone action in the nephron.
	Section 6. Physiology of						

	digestion						
6.1	The characteristic of the basic processes involved in digestion (secretion, absorption, motor skills, incretion, excretion). /Lek/	4	2	CPC-9	L 1.1 l 1.2 l 2.8	0	
6.2	The characteristic of the basic processes involved in digestion (secretion, absorption, motor skills, incretion, excretion). /Pract/	4	4	CPC-9	L 1.1 l 1.2 l 2.8	0.5	Role-playing game "Absorption mechanisms of various substances in the blood"
6.3	Digestion in oral cavity and stomach. /Pract/	4	4	CPC-9	L 1.1 l 1.2 l 2.8	0	
6.4	Pancreatic activities. The involvement of the liver in digestion. Digestion in the small and large intestine. /Pract/	4	4	CPC-9	L 1.1 l 1.2 l 2.8	0	
6.5	Digestion in oral cavity and stomach. /Lek/	4	2	CPC-9	L 1.1 l 1.2 l 2.8	0	
6.6	Pancreatic activities. The involvement of the liver in digestion. Digestion in the small and large intestine/Lek/	4	2	CPC-9	L 1.1 l 1.2 l 2.8	0	

6.7	The characteristic of the basic processes involved in digestion (secretion, absorption, motor skills, incretion, excretion). /I.W/	4	1	CPC-9	L 1.1 1.2 l l 2.10 l 2.8	0	Reading the textbook, advanced Rd literature.Working with outstanding lectures. Composition of the schema of the underlying processes of digestion and enzymes in cavity and parietal digestion, as well as the processes of absorption of essential nutrients.
6.8	Digestion in oral cavity and stomach. /I.W/	4	1	CPC-9	L 1.1 1.2 l l 2.10 l 2.8	0	Reading the textbook, advanced Rd literature.Working with outstanding lectures.To make a table for the characteristics of digestion in oral cavity and stomach.
6.9	Pancreatic Activities. The involvement of the liver in digestion. Digestion in the small and large intestine/I.W/	4	1	CPC-9	L 1.1 1.2 l l 2.10 l 2.8	0	Reading the textbook, advanced Rd literature.Working with outstanding lectures.To make a table for the characteristics of digestion in the small and large intestine.
	Section 7. Physiology of higher nervous activity						
7.1	HNA. Conditional and unconditional reflexes. Inhibition in	4	2	CPC-9	L l l 2.9 1.2 1.1	0	

	the cortex. Memory/Lek/						
7.2	Conditional and unconditional reflexes. Memory. Inhibition in the cortex. /Pract/	4	4	CPC-9	L l l 2.9 1.2 1.1	0	
7.3	Especially HNA man. Dynamic stereotype. Types of HNA/Pract/	4	4	CPC-9	L l l 2.9 1.2 1.1	1	Role-playing game "behavioral Models of different types of temperament"
7.4	Emotions. Motivation. The physiology of sleep/Pract/	4	4	CPC-9	L 1.1 l 2.9	0	
7.5	Especially HNA man. Types of HNA /Lek/	4	2	CPC-9	L l l 2.9 1.2 1.1	0	
7.6	The physiology of sleep. Physiology of emotions, motivation. /Lek/	4	2	CPC-9	L l l 2.9 1.2 1.1	0	
7.7	Conditional and unconditional reflexes. Memory. Inhibition in the cortex. /I.W/	4	1	CPC-9	L 1.1 1.2 l l l 2.9 2.10	0	Reading the textbook, advanced Rd literature.Working with outstanding lectures. Summarize of the text.
7.8	Especially HNA man. Dynamic stereotype. Types of HNA/I.W/	4	1	CPC-9	L 1.1 1.2 l l l 2.9 2.10	0	Reading the textbook, advanced Rd literature.Working with outstanding lectures.To make a table "HNA man. Types and their characteristics.

7.9	Emotions. Motivation. The physiology of sleep/I.W/	4	1	CPC-9	L 1.1 1.2 l l l 2.9 2.10	0	Reading the textbook, advanced Rd literature.Working with outstanding lectures.To make a table "phases of sleep and their characteristics".
7.10	/Exam/	4	18	CPC -9		0	

5. ASSESSMENT FUND

5.1. Advancement Questions and Assignments

Questions to test the level of teaching to KNOWLEDGE:
3 semester
Psychology as a science and training discipline, methods of Physiology.
-External and internal environment and their interaction.
-Blood: number, function composition.
-The physico-chemical properties of blood: viscosity, density, osmotic and oncotic pressure.
-Hemolysis and its types.
-Acid-basic balance, blood buffer systems.
-Shaped elements of the blood (erythrocytes, leukocytes, platelets): number, properties, functions.
-Hemostasis, anticoagulant blood system.
-Antigenic blood system.
-Bio-membrane. Transport of substances across the membrane.
-Excitability and its measurement.
-Electrical currents in living tissue: resting membrane potential, action potential.
Excitation profile: phases refractory, "all or nothing" and the conditions of his manifestations.
-The physiology of nerve.
-Physiology of synapses.
-The physiology of muscles.
-Nervous system: functions, evolution, classification
-Physiology of neurons and synapses
-Reflex: definition, classification, value. Reflex arc. Reflex time.
-Inhibition in the CNS.
-Nerve center. Properties of nerve centres.
-Interaction of reflexes.
-Physiology of the CENTRAL NERVOUS SYSTEM: spinal cord, medulla oblongata, pons, midbrain, cerebellum, diencephalon, cerebrum.
-Central nervous regulation of somatic and vegetative functions.
-General Physiology: receptor analyzers, channel, Central Division.
-Private Physiology Analyzers: Visual, auditory, vestibular, somato-visceral pain, Gustatory and olfactory analyzers.
-Local and systemic humoral regulation
-Hormones: classification, functions, properties, mechanism of action.

4 semester
-Physiological properties of heart muscle. Automaticity, conductivity, excitability, contractility.
-Phase analysis of cardiac cycle.
-Symptoms of cardiac activity.
-Basic principles of hemodynamics.
-Characteristics of the movement of blood through the vessels.
-Mechanisms of regulation of the circulatory system.
-External breathing. Mechanisms of inhalation and exhalation. Gas exchange in the lungs, factors. Pulmonary volumes and capacities.

-Transport of gases in blood. Gaseous Exchange in tissues. Regulation of respiration. Hypo-and hyperbaria. Hypoxia. Mountain sickness.
-Exchange of energy. Basal metabolism. Thermoregulation. Physiology of nutrition.
-Kidney. Mechanisms of uropoiesis. Regulation of filtration and reabsorption.
-Participation of the kidneys in maintaining homeostasis of the organism.
-Characteristic of the basic processes involved in digestion (secretion, absorption, motor skills, incretion, excretion).
-Digestion in oral cavity and stomach.
-The activity of the pancreas. Involvement of the liver in digestion. Digestion in the small and large intestine.
-Conditional and unconditional reflexes. Memory. Inhibition in the cortex.
-Especially HNA man. Dynamic stereotype. Types of HNA.
-Emotions. Motivation. The physiology of sleep.
Questions to test the level of teaching to SKILLS :
3 semester
-Calculate the amount of blood in humans.
-Draw a diagram of the structure of the cell membrane
-To draw a graph of AP skeletal muscles
-Draw a diagram of the structure of nerve fibres
-Draw a diagram of the structure of the synapse
-Draw a diagram of the structure of muscle fiber
-To draw a graph of a single muscle contraction
-Draw a diagram of the reflex arc
-Draw a diagram of the various types of Central inhibition system
-Draw a diagram of interaction of reflexes
-Draw a diagram tonic reflex spinal cord
-Draw a diagram of autonomic reflex arc
-Draw a diagram of the structure of the analyzer

4 semester
-Draw a diagram circles of blood circulation
-Draw a diagram conduction system of the heart
-To draw a graph of typical and atypical AP infarction
-Draw graphics structure of cardiac cycle
-Calculate the time of cardiac cycle
-Draw a diagram of ECG in (II) standard stands
-To draw graphs of changes in blood pressure, resistance, and linear velocity of blood flow in the course of the vascular bed
-Explain the open circulation model Weber
-Draw a diagram Starling (Exchange of water and substances in the capillaries)
-Draw your own diagrams and related reflex regulation of blood circulation
-Calculate pulse and secondary dynamic pressure, volumetric blood flow rate and peripheral resistance in humans
-Calculate the norm of the vital capacity of lungs, depending on sex, age and growth
-Draw a diagram of the reflex arc own respiratory reflexes
-Calculate basal metabolic rate standards on tables by Harrys-Benedict
-Calculate the degree of deviation of Exchange according to the formula Reed.
-Draw a diagram of the structure of nephron.
-Calculate the speed glomerular filtration on inulin.
-Draw a diagram of the main processes of digestion
-Draw a diagram intake of nutrients (proteins, fats, carbohydrates)

Questions to test the level of teaching to EXPERTISE:
3 semester
-Demonstrate a methodology for counting cells in camera Gorjaeva
-To demonstrate the methodology for determining the speed of sedimentation of erythrocytes (ERYTHROCYTE SEDIMENTATION RATE) at Panchenkov.
-To demonstrate the methods of determining the number of hemoglobin colorimetric method (Sali)
-Demonstrate a methodology for counting cells in camera Gorjaeva.
-To demonstrate the methodology for determining the antigenic properties of blood using coliklons

-Demonstrate methods of determining blood clotting time (modification of Bjurker.
-To demonstrate the methodology for determining the time of bleeding (the Duke)
-Demonstrate the technique of preparation the neuromuscular drug frog
-To demonstrate the methodology for determining the threshold of irritation to excitable tissues

-Demonstrate the second experience Galvani
-Demonstrate Matteuchi experience
-Demonstrate the methodology of experimental confirmation of the laws of the conduction of excitation to nerve
-Show registration technique of muscle contraction with different strength and frequency of the stimulus.
-To demonstrate the methodology for determining the time of spinal reflex at the frog
-Demonstrate the methodology of experimental confirmation of the Central inhibition spinal reflexes (experience Sechenov)
-Demonstrate the technique check of spinal monosynaptic reflexes in the human.
-Demonstrate a technique checks the coordination function of the cerebellum using special samples
-Demonstrate the technique research of poznotonic reflexes from rabbit
-Demonstrate a methodology for evaluating autonomic tone by calculating the vegetation index Kerdo
-To demonstrate the methodology for assessing the reactivity of the autonomic nervous system using reflex Danini-Ashner.
-Demonstrate methods of determining thresholds of sensations
-To demonstrate the methodology for determining the blind spot on the retina (the experience of Mariotte)
-Demonstrate the methodology of the study of the phenomena of adaptation and sensitization of olfactory receptors

4 semester
-Demonstrate a technique the pilot confirmation the leading role of sinus node in automaticity heart (Gaskell experience)
-Demonstrate the methodology of experimental confirmation of the degree of automaticity in different parts of the heart (Stannius experience)
-Demonstrate the technique of auscultation heart tones
-Demonstrate the technique of measuring ABP non-invasive methods (Riva-Rocci and Korotkov)
-To demonstrate the methods of determining the vital capacity of the lungs using spirometry
-Demonstrate a methodology for evaluating the aerodynamic resistance Airways (Pikfloumerija).
-Demonstrate how to conduct sampling at maximum ability to breath hold
-Demonstrate the daily dietary intake methodology for those intellectuals
-Demonstrate the methodology formulation of conditional wink reflex.
-Demonstrate a methodology for evaluating different types of memory.
-Demonstrate a technique devise internal and external inhibition.
-To demonstrate the methodology for determining the type of temperament by A. Belov.

5.2. Course Papers Themes

Essays are not provided

5.3. Assessment Fund

DEMO VERSION TESTS
1. Filtration occurs in the following part of the nephron
a) distal tubule
b) proximal tubule
c) ascending part of the loop of Henle
g) kidney glomerulus.
2. What are the functions of hydrochloric acid gastric juice
a) denaturation protein, activates pepsinogen
b) denaturation proteins, activates the saliva amylase
c) slows the hormones 12 duodenal ulcer
g) fats action, inhibits emulsifies lipase

5.4. List of Assessment Tools

Practical lesson to each student must complete homework:
When you run 0-59% jobs one section-0-0, 9 points
60-69%-1 point
70-84%-1.25 points

85-100%-1.5 points
SCALE of ASSESSMENT test (landmark control)
1. in a test setting 20 issues.
2. issues provides ready answers to choose one right and the other wrong.
3. For each correct answer-5%
4. the overall score is defined as the sum of accumulated interest.
5. Typed number per cent translates into points
When testing under the inner environment. Physiology of blood. Humoral regulation ":
from 0 to 60% (0-12 correct answers), then it is 0-7 points
From 65% to 75% (13-15 correct answers), then it is 8-9 points
From 80% to 90% (16-18 correct answers), then it is 10-11 points
From 95% to 100% (19-20 correct answers), then this constitutes 12 credits

When testing for respiratory Physiology, metabolism, thermoregulation, nutrition selection "
from 0 to 60% (0-12 correct answers), then it is 0-7 points
From 65% to 75% (13-15 correct answers), then it is 8-10 points
From 80% to 90% (16-18 correct answers), then it is 11-13 points
From 95% to 100% (19-20 correct answers), then it is 14-15 points

When testing under the HNA Physiology "in one test job 10 issues. The questions are given ready answers to choose from, one right and the other wrong. For each correct answer-10%
from 0 to 50% (0-5 correct answers), then it is 0-5 points
60% (6 correct answers), then it is 6 points
From 70% to 80% (7-8 correct answers), then it is 7-8 points
From 90% to 100% (9-10 correct answers), then it is 9-10 points

SCALE of ASSESSMENT Colloquium (landmark control)
"% 85-100"
• deep and lasting learning section;
• complete, consistent, and logical answers that follow scientifically literate;
• demonstration of student knowledge in the volume traversed programs and information from additional literature;
• reproduction of educational materials with the required degree of accuracy.
"% 70-84"
• the existence of minor errors are fixed after further student confidently and leading questions;
• demonstration of student knowledge in the volume traversed program;
• a clear statement of the training material.
"% 60-69"
• the existence of minor errors in the response, not of a student;
• demonstration of a student is not sufficient for knowledge passed the program;
• not structured, not slender outline of educational material in response.
"less than 60%»
• not knowing the material section;
• in reply raises serious errors.

At a colloquium under the basic mechanisms of cells»
0-59%-0-9 points
60-69%-10-12 points
70-84%-13-15 points
85-100%-16-18 points

At a colloquium under the physiology of digestion "
0-59%-0-5 points
60-69%-6-7 points
70-84%-8-9 points
85-100%-10 points

SCALE of ASSESSMENT INTERVIEW (landmark control)
"% 85-100"

• deep and lasting learning section;
• complete, consistent, and logical answers that follow scientifically literate;
• demonstration of student knowledge in the volume traversed programs and information from additional literature;
• reproduction of educational materials with the required degree of accuracy.
"% 70-84"
• the existence of minor errors are fixed after further student confidently and leading questions;
• demonstration of student knowledge in the volume traversed program;
• a clear statement of the training material.
"% 60-69"
• the existence of minor errors in the response, not of a student;
• demonstration of a student is not sufficient for knowledge passed the program;
• not structured, not slender outline of educational material in response.
"less than 60%»
• not knowing the material section;
• in reply raises serious errors.

When conducting interviews under CNS Physiology and function of sensory systems»
0-59%-0-12 points
60-69%-13-17 points
70-84%-18-21 points
85-100%-22-25 points

When conducting interviews on the physiology of blood circulation and lymph circulation»
0-59%-0-7 points
60-69%-8-10 points
70-84%-11-13 points
85-100%-19-20 points

GRADING SCALE for ORAL QUESTIONING (interim control-" KNOWLEDGE")
When assessing oral responses to check level of teaching to KNOW the following criteria:
1. Knowledge of basic processes studied discipline, depth and completeness of the disclosure issue.
2. knowledge of terminology and use it when replying.
3. ability to explain physiological mechanisms and processes, to draw conclusions and generalizations, giving reasoned answers.
4. possession monologic speech, logic and consistency of the response, the ability to respond to questions, to express their opinions on the issue.
85-100% (6 points) estimated response, which shows strong knowledge of basic physiological processes, different depth and completeness of disclosure topics; possession of terminological apparatus; the ability to explain the essence of mechanisms, draw conclusions and generalizations, giving reasoned answers, give examples; fluency monologic speech, logic and consistency of response.

70-84% (5 points) estimated response that solid knowledge of basic physiological processes, different depth and completeness of disclosure topics; possession of terminological apparatus; the ability to explain the essence of mechanisms, draw conclusions and generalizations, giving reasoned answers, give examples; fluency monologic speech, logic and consistency of response. However one or two inaccuracies in response.
60-69% (4 points) estimated response testifying mostly about knowledge of physiological processes, characterized by a lack of depth and completeness of disclosure topics;knowledge of the major issues of the theory; poorly formed skills analysis mechanisms, lack of ability to provide reasoned answers and give examples; not enough free possession monologic speech, logical and consistent response. Multiple errors in the content of the response.
0-59% (0-3 points) estimated response that ignorance of physiological processes, characterized by shallow disclosure topics; ignorance of the basic issues of theory, unformed skills analysis mechanisms; failure to provide reasoned answers, weak ownership monologic speech, lack of consistency and coherence. Admitted serious errors in the content of the response.

SCALE of ASSESSMENT of ANALYTICAL tasks (interim control-"SKILLS")
When assessing responses to training level checking to BE ABLE to take into account the following criteria:
85-100% (8 points) estimated response, in which the student demonstrates a full understanding of the job. All

the requirements are met.
70-84% (7 points) estimated response, in which the student demonstrates considerable understanding of the job. Most job requirements fulfilled. There are minor bugs.
60-69% (5-6 points) estimated response, in which the student demonstrates a partial or a small understanding of the job. The task is solved not by more than half, allowed a large number of errors.
0-59% (0-4 points) evaluated the response in which the student either does not perform the job, or performs his part.

SCALE of ASSESSMENT of PRACTICAL TASKS (interim control-"EXPERTISE")
When assessing responses to training level checking to BE ABLE to take into account the following criteria:
85-100% (10 points) estimated response, in which the student has fully complied with the practical task, avoiding mistakes. Exhaustively interprets the results.
70-84% (9 points) estimated response, in which the student performs a practical task. Most job requirements have been met. There are minor bugs. The student is able to interpret the
the data obtained with little difficulty.
60-69% (8 points) estimated response, in which the student demonstrates a partial fulfilment of the practical assignment. The task is solved not by more than half, allowed a large number of errors. A student is not able to interpret the results.
0-59% (7 points) estimated response, in which the student either does not perform practical task, or performs his completely wrong.

6. COURSE (MODULE) METHODOLOGICAL AND INFORMATIONAL SUPPORT

6.1 Recommended Reading

6.1.1 Required Reading List

	Authors, Compliers	Title	Book publisher, Year
L 1.1	Orlov R.s.	Normal Physiology: Tutorial	Geotar-Media 2010
L 1.2	Ed. A. Aghajanian	Human Anatomy and Physiology	Moscow: INSTITUTE of 2013

6.1.2 Advanced Reading

	Authors, Compliers	Title	Book publisher, Year
L 2.1	Zarifyan A.G., Naumova T.N.	Normal physiology part (I) : A course of lectures for students of speciality " Stomatologia "	Bishkek: KYRGYZ-RUSSIAN SLAVIC UNIVERSITY 2008
L 2.2	Compl. A.G. Zarifyan, I.E. Kononets, Bc Tjurekanova;Kyrgyz-Russian Slavic University	Physiology of the endocrine system: a manual for practical classes in normal physiology	Bishkek: KYRGYZ-RUSSIAN SLAVIC UNIVERSITY 2005 ACAD
L 2.3	Zarifyan A.G., Naumova, T.N., Ilichev V.p.	Physiology of analyzers: tutorial	Bishkek: KYRGYZ-RUSSIAN SLAVIC UNIVERSITY 2010
2.4.1	Compl. A.G. Zarifyan	The physiology of the heart: a tutorial	Bishkek: KYRGYZ-RUSSIAN SLAVIC UNIVERSITY 2008
L 2.5	A.G. Zarifyan, I.E Kononets, E.a. Dzhajlobaeva, T.N Naumova	Physiology of hemodynamics: tutorial	Bishkek: KYRGYZ-RUSSIAN SLAVIC UNIVERSITY 2014
2.6.1	A.G. Zarifyan, Naumova T.N., A.K. Nartaeva, I.E. Kononets	Physiology of respiration: a tutorial	Bishkek: KYRGYZ-RUSSIAN SLAVIC UNIVERSITY 2014
2.7.1	Zarifyan A.G., Kononets I.E., Dzhajlobaeva E.A.	Physiology of selection: tutorial	Bishkek: KYRGYZ-RUSSIAN SLAVIC UNIVERSITY 2015
L 2.8	Zarifyan A.G., Kononets I.E., Naumova T.N., Makimbetova Ch.Je.	Physiology of digestion: tutorial	Bishkek: KYRGYZ-RUSSIAN SLAVIC UNIVERSITY 2015
2.9 l	Zarifyan A.G., Makimbetova Ch.Je.,	Physiology of higher nervous activity: tutorial	Bishkek: KYRGYZ-RUSSIAN SLAVIC

	Gorbyleva K.V., Kalmambetova A.I.		UNIVERSITY 2015
L 2.10	Ed. V.n. Yakovlev	Normal Physiology: training modules for students '	Voronezh: IZD-vo IM. E.a. Bolkhovitinov 2005

6.1.3. Guidance Papers			
	Authors, compliers	Title	Book,Publisher, Year
3.1 l	Compl. A.G. Zarifyan, etc.; CRT	Physiology of blood: a guide to practical exercises on normal physiology	Bishkek: KYRGYZ-RUSSIAN SLAVIC UNIVERSITY Publishing House 2007
L 3.2	CRT	General Physiology of excitable structures: Method to benefit Scient. studies on normal physiology. For Stud medical faculty in universities	Bishkek: KYRGYZ-RUSSIAN SLAVIC UNIVERSITY 2001
6.2. Online Resources			
E1	Multimedia presentation of "heart"		https://www.youtube.com/wa tch? v = 8etGdoSNdT0
E2	Multimedia presentation "Biomechanics of the external respiration"		https://www.youtube.com/wa tch? v = 9ySHjjMr4nA
6.3. List of Information and Education Technologies			
6.3.1 Competence-based Educational Technologies			
6.3.1.1.	Traditional educational technology: lectures, practical classes, labs, reconstructive type, message-oriented knowledge and ways of action passed students in finished form and intended for assimilation. Lectures provides use of multimedia equipment. Conducting practical training with the use of tables, booths, Visual AIDS.		
6.3.1.2.	Innovative educational technology: used role playing, case studies of specific situations, prepare the students with reports presentations on given topics.		
6.3.1.3.	Information educational technology: an independent student use computer technology and Internet resources (computer simulative program, see paragraph 6.3.2.). View instructional videos.		
6.3.2. List of Information Reference systems and software			
6.3.2.1.	Multimedia training Physiology Interactive disc»		
6.3.2.2.	computer program «simulative PhysioEx 8.0 for Human Physiology "		
6.3.2.3.	computer program «simulative Physiology Interactive Lab Simulations 3.0»		
6.3.2.4.	Multimedia training CD "Blood and the Circulatory system.		
6.3.2.5	Computer program "simulative LuPraFi - Sim "Virtual physiology.		
6.3.2.6	File archive (http://www. studfiles . net)		
6.3.2.7	Electron library (http://www. lib . krsu . edu . kg)		
6.3.2.8	Electron library system "Znanium" (http://www. znanium . com)		

7. COURSE (MODULE) LOGISTICS	
7.1	Lectures are held in a classroom for training lecture type on 200 seats equipped with projector and interactive whiteboard.
7.2	Practical exercises, group and individual counseling, monitoring and interim attestation are held in 5 classrooms to 18 seats.
7.3	A vivarium for keeping laboratory animals, as well as the premises for the storage and maintenance of educational and laboratory equipment.
7.4	When teaching the discipline used display equipment: 7 desktop computers, 2 projector, 2 notebook.

7.5	There is an extensive set of teaching and Visual AIDS: 49 educational films, 9 stands, 173 table ,5 models.
7.6	On practical training used lab equipment: spirometers dry-air, pacemaker, sphygmomanometers with fonendoscopes, microscopes, "Biolam", scales, electronic thermostat, chemical reagents for the analysis of physico-chemical and antigenic properties of blood, laboratory glassware.
7.7	For independent work of students, there are 2 audience on 24 seats equipped with computers connected to the Internet and access to electronic information and education environment KRSU. There is a library reading room on 50 seats.

8. COURSE(MODULE) PROFICIENCY METHODICAL GLUIDELINES(FOR STUDENT)

Technological discipline maps in annex No. 1

1. TIPS on planning and ORGANIZATION of the time required to learn discipline.
We recommend the following way to organize time required to study subjects:
Study summary of lectures per day before practical occupation-15-20 minutes.
A study of the theoretical material on textbook and abstract-1:00 per week.
Preparations for the practical lesson-2:00
Just a week-3:20.

2. INDIVIDUAL WORK of STUDENTS in STUDYING DISCIPLINES.
To understand the material and the quality of its absorption, the following sequence is recommended:
-When preparing to engage the student, you must be familiar with the methodological development for the upcoming lesson (hosted at the stand of the Department)
-Repeat necessary material of disciplines leading to the study of normal physiology.
-The materials of lectures in both primary and secondary literature to find the answers to the questions for self-training.
-In a workbook run written homework (e.g., abstract, tables, protocols, practical work, drawing charts, graphs)
3. Test preparation
In preparation for the tests, you must use the lecture material and reading primary and secondary literature.

4. preparations for KOLLOKVIUMAM and INTERVIEWS
Get acquainted with the list of issues. Repeat studied material. In addition to the "learning" of the material, it is very important to achieve the State of understanding of the topics studied discipline.

5. preparations for the INTERIM MONITORING
When preparing for the exam you need to familiarize yourself with the questions for the exam. Know the theoretical material according to the examination questions. Be able to draw up diagrams, graphs and perform calculations some physiological parameters. Own methods of evaluation of key performance indicators systems of the human body.