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

KYRGYZ-RUSSIAN SLAVIC UNIVERSITY

Endorsed by Karaeva Rosa
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02.09. 2024

Clinical Biochemistry

Course Outline (Module)

Assigned to	**Chemistry and Biochemistry Department**
Academic Curriculum	31.05.01. - RF, 5б0001 - KR General Medicine

Mode of Study	**Intramural**
Total Credit Value	**2 credit points**

Course Hours	72	Scope of Testing Semesters
including:		credits with a mark 9
in-class learning	32	
Individual work	39.7	

The Course outline developed by: Matushenko N.S., CBS, Ibraeva I.G., CMS.

Course Hours Scheduling (per semester)

Semester (<Course>.< Semester in course>)	**9 (5.1)**		Total	
weeks	16			
Type of Training	AC	CO	AC	CO
Practical Session	32	32	32	32
Contact work in period of theoretical education	0,3	0,3	0,3	0,3
Including Interactive Session	2	2	2	2
Total In-class Session	32	32	32	32
Face-to-face Learning	32,3	32,3	32,3	32,3
Individual work	39,7	39,7	39,7	39,7
Total	72	72	72	72

1. COURSE OUTLINE OBJECTIVES	
1.1	In-depth study of the molecular basis of biological processes in normal and in some pathologies, mechanisms of metabolic regulation; identification of the reasons for metabolic changes in the body in some pathological conditions, mechanisms of regulation of metabolic processes. Formation of a holistic concept of the rational and effective using of biochemical methods and the laboratory research results for the diagnosis and development of modern preventive and therapeutic measures.

2. PLACE OF THE COURSE IN THE EDUCATIONAL PROGRAM	
Educational Program Units:	B1.B
2.1	**Students' Preliminary Training Requirements:**
2.1.1	Basic knowledge which is necessary for discipline studying is formed in the cycle of mathematical and natural science disciplines (chemistry, biochemistry, biology, anatomy, histology, embryology, cytology, normal physiology, pathophysiology) and disciplines of the professional cycle (propaedeutics of internal diseases).
2.2	**Course Units and Practical Sessions imposing the prior Proficiency:**
2.2.1	faculty therapy;
2.2.2	hospital therapy;
2.2.3	endocrinology;
2.2.4	outpatient therapy;
2.2.5	Infection diseases;
2.2.6	phthisiology;
2.2.7	anesthesiology, intensive care;
2.2.8	oncology

3. STUDENTS' COMPETENCIES RESULTING FROM THE COURCE UNIT (MODULE)	
MPC-9: ability to assess morphofunctional, physiological states and pathological processes in the human body to solve professional problems	
Knowledge:	
Level 1	Main ways and mechanisms of metabolic regulation of carbohydrates, lipids, proteins, amino acids, nucleotide exchanges
Level 2	Molecular basis of physiological processes and their disorders
Level 3	Diagnostically important indicators of the blood, saliva and urine composition and the ranges of their fluctuations in a healthy person
Skills:	
Level 1	Perform laboratory work, fill in the test report, evaluate its results
Level 2	Explain the molecular mechanisms of the structural and functional activity of the main organs and tissues
Level 3	Interpret the results of laboratory biochemical studies, i.e. make a logical connection between the detected deviations of biochemical parameters and metabolic disorders
Expertise:	
Level 1	Skills of independent work with reference, educational and scientific literature
Level 2	To evaluate of diagnostic and prognostic significance of the results of biochemical analysis of blood, gastric juice, saliva, urine
Level 3	Skills of biochemical thinking, biochemical knowledge application to understand molecular mechanisms of pathogenesis and principles of therapeutic effect.

Final Students' Competencis

3.1	**Knowledge:**
3.1.1	goals and main objectives of clinical biochemistry;
3.1.2	characteristics of diagnostic significance of laboratory studies, the main quality indicators of the laboratory diagnostics;
3.1.3	features of changes in the biochemical composition of biological fluids with the most common human diseases, the main biochemical markers of human pathological conditions;

3.1.4	general principles and features of diagnosis of hereditary diseases and congenital anomalies.
3.2	**Skills:**
3.2.1	To choose the best analytical method of clinical research; to send for laboratory and instrumental examination, for consultation with specialists.
3.2.2	To interpret the results of laboratory studies of biological material for the diagnosis of basic human pathological conditions.
3.3	**Expertise:**
3.3.1	skills of effective use of laboratory data to determine the presence of a disease, the effectiveness of its treatment.
3.3.2	the algorithm of the preliminary diagnosis, followed by an additional examination