Ministry of Education and Science of the Kyrgyz Republic

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

Medical biology

Course Outline (Module)

Assigned to the department of	**Physics, Medical Informatics and Biology**
Academic Curriculum	560001 - KR General Medicine (for foreign students)
Qualification	**Specialist**
Mode of Study	**Intramural**
Total Credit Value	3 credit point

Course Hours	96	cope of Testing Semesters:
including: in-class		credit 1
learning	96	
individual work	47,7	

Course Hours Scheduling (per semester)				
Semester Academic Year	**1 (1.1)**		Total	
Weeks	16			
Type of Traning	EP	WP	EP	WP
Lectures	16	16	16	16
Practical Session	32	32	32	32
Contact work during the period of theoretical training	0,3	0,3	0,3	0,3
Including interactive session	4	4	4	4
Total in class Session	48	48	48	48
Face to face learning	48,3	48,3	48,3	48,3
Individual work	47,7	47,7	47,7	47,7
Total	96	96	96	96

1. COURSE OUTLINE OBJECTIVES	
1.1	The formation of students' theoretical knowledge and skills used to study the function and structure of the human body at the molecular, cellular, tissue, organ, organismal levels, necessary for the formation of a holistic natural-science outlook in the practice of a doctor.
1.2	Acquaintance with the principles of the structural and functional organization of living systems: features of the biological level of the organization of matter, the principles of reproduction and development of living systems; the laws of genetics, their role in evolution, cell biology, the diversity of living organisms, the principles of their classification, the main functional systems, the relationship with the environment of supraorganismal systems, which are of interest to practical public health.
1.3	Preparing students for a systematic perception of biomedical, general medical, social and clinical disciplines and the formation of a natural-scientific worldview and the logic of biological thinking, which are necessary for the subsequent practical activities of a specialist in the field of medical and preventive care; Developing the ability to use various kinds of reference materials and manuals necessary for solving practical medical problems.
2. PLACE OF THE COURSE IN THE EDUCATIONAL PROGRAM	
Educational Program Units:	Б1 .В.16.06
2.1	**Students' Preliminary Training Requirements:**
2.1.1	Biology, anatomy and general biology which include in a high school level
2.1.2	Medical biology
2.1.3	Chemistry in the framework of a high school level
2.2	**Course Units and Practical Sessions imposing the prior Proficiency**
2.2.1	Anatomy
2.2.2	Biochemistry
2.2.3	Histology
2.2.4	Microbiology, virology
2.2.5	normal physiology
2.2.6	Hygiene
2.2.7	Epidemiology
2.2.8	Immunology
2.2.9	Obstetrics and gynecology
2.2.10	Urology
2.2.11	Pathophysiology, clinical pathophysiology
2.2.12	Ophthalmology
2.2.13	General hygiene
2.2.14	Anesthesiology, resuscitation and intensive care
2.2.15	Forensic Medicine
2.2.16	Phthisiology
2.2.17	Infectious diseases
2.2.18	Dermatovenereology
2.2.19	Faculty Pediatrics, Endocrinology
2.2.20	Nervous diseases
3. STUDENTS' COMPETENCIES RESULTING FROM THE COURCE UNIT (MODULE)	
IC-l - is able and ready to analyze socially significant problems and processes, use the methods of natural sciences, mathematics and the humanities in various types of professional and social activities	
Know:	
Level 1	basic biological concepts
Level 2	basic scientific medical and biological terminology
Level 3	the main sources of information, bibliographic resources, the methodology for processing scientific and technical information on the Internet and specialized databases, the main methods of working with specialized software for solving standard problems of professional activity
Ability:	

Level 1	use biomedical terminology, information and communication technologies, incl. research methods for solving standard problems of professional activity
Level 2	apply basic research methods to solve professional problems
Level 3	apply information, bibliographic resources, processing methods, search for scientific and technical information using general and specialized databases and use specialized software when carrying out theoretical calculations and processing experimental data to solve standard problems of professional activity
Skills:	
Level 1	elementary methods of work in a biological, physical, chemical laboratory; general safety rules for handling computers, laboratory equipment and chemical reagents
Level 2	biomedical and other terminology; skills of mathematical, biological, chemical and biochemical thinking, skills of independent work with reference, educational and scientific literature
Level 3	skills in working with scientific and educational portals, basic skills in using standard as well as specialized software and databases for statistical processing of research results and presenting them to the scientific community
Final Students' Competences	
3.1	**Know:**
3.1.1	definitions, laws and basic concepts of biology;
3.1.2	structure and functions of the most important chemical compounds (nucleic acids, proteins); the concept of signals and the nature of their occurrence;
3.1.3	the laws of genetics, its significance for medicine; general patterns of origin and development of life
3.1.4	anthropogenesis and ontogenesis of man; basic concepts and problems of the biosphere;
3.1.5	the main patterns of development and vital activity of the organism of an adult and a teenager;
3.1.6	age-, sex- and individual characteristics of the structure and development of a healthy and sick organism;
3.1.7	morphophysiological characteristics, life cycles of individual groups of parasitic unicellular organisms and their carriers.
3.2	**Ability:**
3.2.1	work with light microscopes;
3.2.2	solve case tasks, including genetic tasks;
3.2.3	draw up a pedigree and determine the type and nature of inheritance using the genealogical method;
3.2.4	solve case tasks for modeling medical genetic counseling;
3.2.5	to diagnose pathogens of human protozoal parasitic diseases on a micropreparation and photograph;
3.2.6	select the appropriate methods of comparative analysis in the identification of individual representatives of protozoan parasitic animals and their carriers;
3.2.7	use educational, scientific literature, the Internet for the professional activities of a doctor;
3.3	**Skills:**
3.3.1	the skills of displaying the studied objects and processes in diagrams, drawings, animations;
3.3.2	skills in drawing up diagrams illustrating the causes and mechanisms of chromosomal pathology;
3.3.3	skills in making temporary preparations for microscopy (onion and elodea skin cells, inclusions in the cell);
3.3.4	technique of working with a light microscope;
3.3.5	methods for studying heredity in humans (cytogenetic method, genealogical method); information on the principles of sterilization, disinfection and antiseptic treatment of instruments, etc.;
3.3.6	methods for determining species by morphophysiological characteristics of unicellular parasitic animals and their carriers;
3.3.7	methods of comparative analysis in the study of morphophysiology and development of representatives of individual systematic groups of unicellular parasitic animals and their carriers;
3.3.8	modern methods of computer processing of medical information, basic information transformation technologies: text, spreadsheet editors.