

MINISTRY OF EDUCATION AND SCIENCE OF THE KYRGYZ REPUBLIC

Government-run educational institution of higher professional education
Kyrgyz-Russian Slavic University named after B.N, Yeltsin



Anatomy
Course Outline (Module)

WORKING PROGRAM OF THE DISCIPLINE (MODULE)

Assigned to the department	Anatomy. topographic anatomy and Operative surgery	
Academic cuniculum	560001 25_11Di.pli.xml 560001 KR General Medicine (for foreign student)	
Qualification	specialis	
Mode of study	intramural	
Total credit value	10 credits	
Course hours	360	Scope of testing in semesters:
including:		credit 2
in-class learning	192	exams 1
individual work	131,7	
exams	29,5	

Course hours scheduling (per semester)

Semester (<course>.<semester of the course>)	1 (1.1)		2 (1.2)		Total	
	weeks		18			
Type of training	AC	CO	AC	CO	AC	CO
Lectures	32	32	32	32	64	64
Practical session	64	64	64	64	128	128
Contact work during the period of theoretical training	0,3	0,3			0,3	0,3
Contact work during the examination session			0,5	0,5	0,5	0,5
Including interactive session	6	6	6	6	12	12
Total in-class learning	96	96	96	96	192	192
Face to face learning	96,3	96,3	96,5	96,5	192,8	192,8
Individual work	83,7	83,7	48	48	131,7	131,7
Control			35,5	35,5	35,5	35,5
Total	180	180	180	180	360	360

1. COURSE OUTLINE OBJECTIVES	
1.1	To study the structure of the human body, composing systems and organs based on modern achievement of the anatomy and biology according to the goal of the successive training the students on the theoretical and clinic departments of the university
1.2	In the process of the studying of the human anatomy to consider the individual, sexual and age features of the organism, to show the variability of the organs and abnormality of development
1.3	When studying the anatomy of the organs and systems, instill the understanding of the structures the whole organs, connecting between their separate parts
1.4	To reveal the theoretical and practical meaning of the major discoveries in human anatomy. To emphasize the contribution of the native scientists in development of the different parts of the anatomy
1.5	In the process of teaching of the human anatomy bring up the ethical behavior in the anatomical theater, respectfully and carefully refers to organs of the human body and to the corpse
2. PLACE OF THE COURSE IN THE EDUCATIONAL PROGRAM	
Educational Program Unit	B1.O.03
2.1	Student's Preliminary Training Requirements:
2.1.1	Biology
2.1.2	Chemistry
2.2	Course Units and Practical Sessions imposing the prior Proficiency:
2.2.1	Pediatrics
2.2.2	Traumatology, orthopedy
2.2.3	Stomatology
2.2.4	Children's surgery
2.2.5	Ophthalmology
2.2.6	Hospital surgery
2.2.7	Hospital therapy
2.2.8	Urology
2.2.9	Faculty surgery
2.2.10	Common surgery
2.2.11	Topographical anatomy and operative surgery
2.2.12	Obstetrics and gynecology
2.2.13	Endocrinology
2.2.14	Otorhinolaryngology
2.2.15	Histology, fetology, cytology
3. STUDENTS' COMPETENCIES RESULTING FROM THE COURSE UNIT (MODULE)	
В результате освоения дисциплины обучающийся должен	
OPC-5: the ability to assess the morphofunctional, physiological states and pathological processes in human body for solving professional problems.	
3.1	Knowledge:
Level 1	The common patterns in structure of human body, structural and functional relations in their parts. The methods of anatomical research and anatomic terminology.
Level 2	Anthropogenesis and ontogenesis; the basic patterns in evolution and vital activity of human organs according structural architecture of cells and tissues. Anatomo-topographical relations of organs and their parts in adult, children and teenagers. The main parts in structure and topography of organs and their systems, their main functions in various age periods. The variants in structure abnormalities and congenital anomalies of organs and systems.
Level 3	Applied value of the received knowledge in anatomy of the adult, children and teenagers for future education and further professional activity. Value of basic researches of the anatomic science for practical and theoretical medicine.
3.2	Skills:
Level 1	Correctly to use anatomic instruments (forceps, scalpel, etc.). On anatomical models find and show the organs, their parts, detail in their structure, correctly. Correctly oriented in topography and details of a structure in organs of anatomical model.
Level 2	By method of dissection find and distinguished the muscle and fascias, large vessels, nerves and ducts of glands. On x-ray films find and show the organs and their main structure.
Level 3	On the body find and palpate the main bony and muscular outstanding points; correctly named and show the movements in joints.
3.3	Abilities:
Level 1	To use the scientific literature. To use basic technologies transformation of the information.
Level 2	Individual work with the educational literature on paper and electronic media, to use Internet resources about human anatomy.
Level 3	To use the anatomical terminology. To use in methods dissection the medical instruments - scalpel and forceps.
Final Students' Competences	

3.1	Knowledge:
3.1.1	The methods of anatomical researching and anatomical terminology;
3.1.2	The main stages in development of anatomical science, the role of anatomy for medicine and biology;
3.1.3	The main trends in human anatomy, traditional and modern methods of anatomical researches;
3.1.4	The basis of anatomical terminology;
3.1.5	The common patterns of human organization, structural and functional interrelations of the body's parts;
3.1.6	The role of fundamental researches in anatomical science for practical and theoretical medicine;
3.1.7	The anatomical and topographic interrelations of organs and their parts in adult, children and teenagers;
3.1.8	The main details of organization and topography in organs and their systems, their main functions in different age
3.1.9	The possible variants of organization, abnormalities and congenital anomalies of organs and their systems;
3.1.10	The applied meaning of acquired knowledge in anatomy of adult, children and teenagers for the following education and further – for professional activity.
3.2	Skills:
3.2.1	To use anatomical instruments correctly (forceps, scalpel and etc.);
3.2.2	On anatomical models find and show organs, their parts, and structural components;
3.2.3	On anatomical models orient in topography and structure of organs; show their parts;
3.2.4	By method of dissection find and distinguished the muscles and fascias, vessels, nerves, ducts of glands, separate organs;
3.2.5	On x-ray films find and show the organs and their main structure;
3.2.6	On the body find and palpate the main bony and muscular outstanding points; correctly named and show the movements in joints;
3.2.7	To use scientific literature;
3.3	Expertise:
3.3.1	To use basic technologies transformation of the information;
3.3.2	Individual work with the educational literature on paper and electronic media, to use Internet resources about human;
3.3.3	To use in methods dissection the medical instruments - scalpel and forceps;

4. COURSE (MODULE) STRUCTURE AND CONTENT

Class code	Subject name/type of class	Semester / Year	Hours	Competencies	Literature	Interactive session	Notes
	Subject 1 «OSTEOSYNDESMOLOGY, SKULL»					0	
1.1	Introduction to human anatomy. Osteology – theory of bones. Axes and planes. Anatomical terminology. /Lect./	1	2	OPC-5	L1.1 L1.3 L2.3 L3.1	0	
1.2	Syndesmology – theory of bones joints. /Lect./	1	2	OPC-5	L1.1 L3.1	0	
1.3	Anatomy – as science. Axes, planes, anatomical terminology. Osteology – vertebrae. / Pr./	1	2	OPC-5	L1.1 L1.4 L3.1	0	
1.4	Ribs, sternum, scapula, clavícula. /Pr./	1	2	OPC-5	L3.1	0	
1.5	Free upper limb bones – humerus, radial, ulnar bones. Hand bones. / Pr./	1	2	OPC-5	L1.1 L2.2 L3.1	0	
1.6	Bones of pelvis and free lower limb – femoral bone, tibial, fibular, bones of foot. / Pr.	1	2	OPC-5	L1.1 L1.2 L3.1	0	
1.7	General syndesmology. Vertebrae joints. Vertebral column as a whole. Joints of thorax. Thorax as a whole. / Pr./	1	2	OPC-5	L1.1 L1.3 L3.1	0	
1.8	Bones joints of shoulder girdle. Shoulder joint, elbow joint, wrist joint, joints of hand. / Pr./	1	2	OPC-5	L1.3 L2.1 L3.1	0	
1.9	Joints of pelvic bones. Hip joints, knee joint, ankle joint, joints of the foot. / Pr./	1	2	OPC-5	L1.3 L2.1 L3.1	0	

1.10	CS: «OSTEOSYNDESMOLOGY» /Pr./	1	6	OPC-5	L1.3 L2.3 L3.1	1	Operation on interactive desktop of "Pirogov"
1.11	Developmental variation of skeleton. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /In.	1	2	OPC-5	L2.1 L2.2	0	
1.12	Skull. /Lect./	1	2	OPC-5	L1.3 L2.1 L3.1	0	
1.13	Skull. Cerebral bones– parietal, frontal, occipital, ethmoidal. /Pr./	1	2	OPC-5	L1.3	0	
1.14	Sphenoid, temporal bones. /Pr./	1	2	OPC-5	L1.1 L1.3 L2.3 L3.2	1	Operation in small groups. Operation on interactive anatomic desktop of
1.15	Facial bones. Orbit. Bones of nasal cavity, fossae. /Pr./	1	2	OPC-5	L1.3 L 3.2	0	
1.16	Skull as a whole. Articulation of skull bones. Temporo-mandibular joint. External and internal surfaces, vault and base of skull. /Pr./	1	2	OPC-5	L1.3 L2.1 L3.2	0	
1.17	Variants and abnormal development of skull bones. Age peculiarities. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /In/	1	6	OPC-5	L1.2 L1.3 L3.2	0	
1.18	CS: «SKULL» /Pr./	1	2	OPC-5	L1.5 L2.1 L2.3L3.2	0	
1.19	Subject 2 «MYOLOGY»	1		OPC-5	L3.2	0	
	General muscles anatomy /Lect./						
2.1	Biomechanics of muscles and appendicular joints. /Lect./	1	2	OPC-5	L1.1 L1.3	0	
2.2	The topography of muscles /Lect/	1	2	OPC-5	L1.1 L1.3	0	
2.3	Introduction to myology. Muscles and fascia of head and neck. Triangles of neck. Fascia of neck. /Pr./	1	2	OPC-5	L 1.1 L1.3	0	
2.4	Muscles and fascia of chest, back, abdomen. Topographical features. Weak places of abdomen walls. Diaphragm. /Pr./	1	2	OPC-5	L1.1 L2.1 L3.3	0	
2.5	Muscles and fascia of shoulder girdle and arm. Muscles and fascia of forearm and hand. Topography of upper limb. /Pr./	1	2	OPC-5	L1.3 L2.1 L3.3	0	
2.6	Muscles and fascia of pelvis, femur, leg and foot. Topography of lower limb. /Pr./	1	2	OPC-5	L1.3 L1.4 L3.3	0	
2.7	Variants of muscles development, their topography. Work with literature recourses and etc., including in an interactive way. Work with	1	6	OPC-5	L1.3 L1.4 L3.3	1	Situational task on the theme "Anatomy of fascia and

	electronic learning resources. /In/							cellular spaces of the head and neck»
2.8	CS: «MYOLOGY» /Pr./	1	2	OPC-5	L1.5 L2.2 L2.3	0		
2.9	Subject 3 «DIGESTIVE SYSTEM»	1		OPC-5	L3.3	0		
	Introduction of digestive system /Lect./							
3.1	The anatomy of digestive tract /Lect./	1	2	OPC-5	L1.1 L1.4	0		
3.2	The accessory organs of the digestive system. /Lect./	1	2	OPC-5	L1.1 L1.4 L2.1	0		
3.3	Anatomy of peritoneum /Lect./	1	2	OPC-5	L1.4 L2.1	0		
3.4	General review of digestive organs. Oral cavity. Salivary glands. Tongue, teeth. /Pr./	1	2	OPC-5	L1.2 L1.4	0		
3.5	Pharynx, esophagus, stomach. /Pr./	1	2	OPC-5	L1.4 L3.4	0		
3.6	Small and large intestine. /Pr./	1	2	OPC-5	L1.2 L3.4	0		
3.7	Liver. Pancreas. /Pr./	1	2	OPC-5	L1.2 L2.1 L3.4	0		
3.8	Spleen. Peritoneum. Arrangement of the peritoneum. Age peculiarities. /Pr./	1	2	OPC-5		0		
3.9	Abnormal development of digestive organs. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /Iw/.	1	6	OPC-5	L1.2 L2.1 L3.4	1		Work on the interactive desk of the "Pirogov".
3.10	CS: «DIGESTIVE SYSTEM» /Pr./	1	2	OPC-5	L1.2 L2.1 L3.4	0		
3.11	Subject 4 «RESPIRATORY SYSTEM»	1		OPC-5	L3.4	0		
	General review of respiratory system. /Lect./							
4.1	Respiratory organs. Nasal cavity. Paranasal sinuses. Larynx, trachea. /Pr./	1	2	OPC-5	L1.3 L1.4	0		
4.2	Bronchial tree. Lungs. Thyroid, parathyroid glands. /Pr./	1	2	OPC-5	L1.2 L1.4 L3.5	0		
4.3	Mediastinum. Pleura. Thymus gland. /Pr./	1	2	OPC-5	L1.4 L2.1 L3.5	0		
4.4	Abnormalities and variants of respiratory organs development. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /In/	1	6	OPC-5	L1.1 L1.3 L3.5	1		Project method and group discussion on the topic "The respiratory system". Work on the interactive desk of the "Pirogov".
4.5	CS: « RESPIRATORY SYSTEM» /Pr./	1	2	OPC-5	L1.4 L2.1 L2.3	0		
4.6	Subject 5 «UROGENITAL SYSTEM»	1	2	OPC-5	L3.5	0		
	General review. Urinary system. /Lect./							
5.1	General review of reproductive system /Lect./	1	2	OPC-5	L1.4 L2.1	0		
5.2	The functional anatomy of reproductive system /Lect./	1	2	OPC-5	L1.4 L2.1 L2.2	0		

5.3	Endocrine system. /Lect./	1	2	OPC-5	L1.4 L2.1 L2.3	0		
5.4	Excretory organs. Kidneys, suprarenal glands. /Pr./	1	2	OPC-5	L1.1 L2.1	0		
5.5	Ureter, urinary bladder. Female urethra. /Pr./	1	2	OPC-5	L1.1 L1.4 L3.6	0		
5.6	Male genital organs. /Pr./	1	2	OPC-5	L1.4 L2.1 L3.6	0		
5.7	Female genital organs. /Pr./	1	2	OPC-5	L1.2 L1.4 L3.6	0		
5.8	Male and female perineum. /Pr./	1	2	OPC-5	L1.1 L1.4 L3.6	0		
5.9	Abnormalities and variants of urinary organs, age peculiarities of masculine and female genital organs. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /In/	1	3	OPC-5	L1.1 L1.4 L3.6	1		Work in small groups
5.10	CS: «UROGENITAL SYSTEM» /Pr./	1	9	OPC-5	L1.4 L2.1 L3.6	0		
5.11	Radioanatomy of internal organs with use of MRI, U/S, NMR elements. /Lect./	1	2	OPC-5	L3.6	0		
5.12	The functional anatomy of internal organs /Lect./	1	2	OPC-5	L1.1 L1.4 L2.2	0		
5.13	Reworks of skipped lectures /Lect/	1	2	OPC-5	L1.1 L1.2	0		
5.14	Credit class /Pr./ /Credit/	1	2	OPC-5	L1.1 L1.4	0		
5.15	Subject 6 «CNS»	1	0			0		
	Introduction to neurology. /Lect./							
6.1	Physiologic anatomy of brainstem. /Lect./	1	2	OPC-5	L1.1 L1.2 L2.1	0		
6.2	The functional anatomy of cerebellum and diencephalon /Lect/	2	2	OPC-5	L 1.3 L1.5 L2.1	0		
6.3	Morphology of cerebral cortex. /Lect./	2	2	OPC-5	L1.2 L1.4	0		
6.4	Pathways of the central nervous system. /Lect./	2	2		L1.1 L1.3 L2.2	0		
6.5	Introduction to neurology. Spinal cord. Radixes. Segments. /Pr./	2	2	OPC-5	L1.5 L2.2	0		
6.6	Topography of nucleus and conduction tracts of gray and white matter of spinal cord. /Pr./	2	2	OPC-5	L1.2 L3.7	0		
6.7	Review of brain. Embryogenesis. Medulla oblongata. Pons. Rhomboid fossa. IV ventricle. /Pr./	2	2	OPC-5	L1.2 L3.7	0		
6.8	Cerebellum. Midbrain. Features, conducting tracts. /Pr./	2	2	OPC-5	L1.1 L2.2 L3.7	0		
6.9	Diencephalon. III ventricle. /Pr./	2	2	OPC-5	L1.3 L1.5 L3.7	0		
6.10	Morphology of cerebral hemispheres – gyrus, sulcus. Cortical analyzers. Limbic system. /Pr./	2	2	OPC-5	L1.2 L1.3 L 3.7	0		
6.11	White matter of hemispheres. Basal nuclei. Lateral ventricles. /Pr./	2	2	OPC-5	L1.5 L2.2 L3.7	0		

6.12	Meninges of brain and spinal cord. Conducting tracts of spinal cord and brain. /Pr./	2	2	OPC-5	L1.1 L2.2 L3.7	0		
6.13	Abnormal development of spinal cord and brain. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /In/	2	2	OPC-5	L1.2 L2.2 L3.7	1		Creative task
6.14	CS: «CNS» /Pr./	2	2	OPC-5	L1.5 L2.2 L3.7	0		
6.15	Subject 7 «Sensory organs»	2	2	OPC-5	L3.7	0		
	Physiologic anatomy of visual organ. /Lect./							
7.1	Physiologic anatomy of organs of equilibrium and hearing. /Lect./	2	2	OPC-5	L1.3 L2.1	0		
7.2	Anatomy of the skin. Organs of taste and smell /Lect./	2	2	OPC-5	L1.3 L2.1	0		
7.3	Visual organ. Eyeball. Auxiliary eye apparatus. Optic tract. /Pr./	2	2	OPC-5	L1.1 L2.2	1		Discation table "Skin"
7.4	Auxillary eye apparatus. Optic tract /Pr/	2		OPC-5	L1.3 L1.4 L3.8	0		
7.5	External and middle ear. /Pr./	2	2	OPC-5	L1.3 L2.1 L3.8	1		
7.6	Internal ear. Cochlear, vestibular tract. Skin organs of taste and smell /Pr./	2	2	OPC-5	L1.3 L2.2 L3.8	0		
7.7		2	2	OPC-5	L1.3 L2.2 L3.8	0		
	Abnormal and various development of sense organs: eye, ear. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /In/							
7.8	CS: «Sensory organs». /Pr./	2	2	OPC-5	L2.1 L2.2 L2.3	0		
7.9	Subject 8 «Heart, vessels and nerves of head, neck»	2	2	OPC-5	L3.8	0		
	Cranial nerves. General characteristics. /Lect./							
8.1	Introduction to angiology. Heart. /Lect./	2	2	OPC-5	L1.3 L2.1 L3.9	0		
8.2	Cervical plexus. Cranial nerves– XII, XI, III, IV, VI pairs. /Pr./	2	2	OPC-5	L1.3 L2.1 L3.8	0		
8.3	Trigeminal nerve (V pair) – I, II, III branches. /Pr./	2	2	OPC-5	L1.3 L2.4 L3.9	0		
8.4	VII, IX, X pairs of cranial nerves. Ganglion along the V	2	2	OPC-5	L1.3 L2.4 L3.9	0		
8.5	Heart – features, valves. /Pr./	2	2	OPC-5	L1.5 L2.2 L3.8	0		
8.6	Heart – topography, blood supply, innervation. /Pr./	2	2	OPC-5	L1.5 L2.2 L3.10	0		
8.7	Branches of aortic arches. Common, external, internal carotid artery. /Pr./	2	2	OPC-5	L1.5 L2.2 L3.10	0		
8.8	Subclavian artery. Veins of head and neck. Lymph. /Pr./	2	2	OPC-5	L1.5 L2.2 L3.10	0		
8.9	Heart abnormalities. Anastomosis. Work with literature recourses and etc., including in an interactive way.	2	2	OPC-5	L1.4 L1.5 L2.2 L3.10	1		The creative task "The heart, the blood circuits"

	Work with electronic learning resources. /In/							
8.10	CS: «Heart, vessels and nerves of head and neck». /Pr./	2	2	OPC-5	L1.4 L1.5 L2.2	0		
8.11	Subject 9 «Vessels and nerves of cavities»	2	2	OPC-5	L3.10	0		
	Arterial system of human body. /Lect./							
9.1	Venous system. /Lect./	2	2	OPC-5	L1.1 L1.2	0		
9.2	Lymphatic system. Immune organs. /Lect./	2	2	OPC-5	L1.1 L1.5 L2.2	0		
9.3	Vegetative nervous system. /Lect./	2	2	OPC-5	L1.5 L2.2 L3.8	0		
9.4	Arteries, veins and nerves of thorax. Lymph. /Pr./	2	2	OPC-5	L1.2 L1.5 L2.2	0		
9.5	Abdominal cavity arteries. /Pr./	2	2	OPC-5	L1.2 L1.5 L3.10	0		
9.6	Abdominal cavity veins. Systems of portal and inferior vena cava. Lymph. Veins anastomosis. /Pr./	2	2	OPC-5	L1.2 L1.4 L3.10	0		
9.7	Arteries, veins of pelvis. Lymph. /Pr./	2	2	OPC-5	L1.4 L3.10	0		
9.8	Lumbar plexus. Short branches of sacral plexus. /Pr./	2	2	OPC-5	L1.2 L2.2 L3.10	0		
9.9	Vegetative nervous system. /Pr./	2	2	OPC-5	L1.2 L2.2 L3.8	0		
9.10	Autonomic ganglion along VII pairs of cranial nerves. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /In/	2	2	OPC-5	L1.1 L2.2 L3.10	1		Works small group
9.11	CS: «Vessels and nerves of cavities». /Pr./	2	2	OPC-5	L1.5 L2.2 L2.3	0		
9.12	Subject 10 «Vessels and nerves of limbs»	2	2	OPC-5	L3.9 L3.10	0		
	Peripheral nervous system. /Lect./							
10.1	Nerovascular formations of the cavities and limbs /Lect./	2	2	OPC-5	L1.1 L1.4	0		
10.2	History of anatomy. /Lect./	2	2	OPC-5	L1.5 L2.2 L2.3	0		
10.3	Arteries, veins, lymph of upper limb. /Pr./	2	2	OPC-5	L1.1 L1.3	0		
10.4	Brachial plexus, branches. /Pr./	2	2	OPC-5	L3.10	1		Round table "Vessels and nerves of the limbs." Interactive anatomical table of the "Pirogov"
10.5	Arteries, veins, lymph of lower limb. /Pr./ /Пp/	2	2	OPC-5	L1.4 L3.9	0		
10.6	Long branches of sacral plexus. /Pr./	2	2	OPC-5	L1.4 L3.10	0		
10.7	Peculiarities of limbs peripheral innervation. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /In/	2	2	OPC-5	L1.4 L3.9	1		Round table "Vessels and nerves of the limbs." Work on the interactive desk of the

