UNIVERSITY "PROF. DR. ASEN ZLATAROV" – BURGAS

MEDICAL FACULTY

DEPARTMENT OF ANATOMY, HISTOLOGY, EMBRYOLOGY, PATHOLOGY, FORENSIC MEDICINE AND ETHICS

Approved by:

DEAN

/Prof. Rumyana Yankova, PhD/ /

S Y L L A B U S

Discipline:	**HUMAN ANATOMY AND HISTOLOGY**
Specialty:	**MEDICINE**
Professional field:	**7.1. Medicine**
Educational and qualification degree:	**MASTER**
Form of training:	**REGULAR**

Burgas, 2024

EXTRACTS FROM THE CURRICULUM

1. GENERAL PARAMETERS OF THE DISCIPLINE			
Total (Academic hours):	810	**ECTS:**	27

Auditorium classes	**Non-auditorium classes**	**Auditorium ECTS**	**Non-auditorium ECTS**
315	**495**	**10.5**	**16.5**

Type of Discipline:	**Academic hours per week: /lectures + practices/**	*Course:*	*Semester:*
Mandatory	**1/2/2/2 + 2/4/4/4**	**I + II**	**I, II, III, IV**

2. STUDY FORMS					
Auditorium classes:	**Academic hours**	**ECTS**	**Non-auditorium classes:**	**Academic hours**	**ECTS**
Lectures	105	3.5	**Consultation**	135	4.5
Practices	210	7	**Individual work**	360	12

3.EVALUATION AND CONTROL	
Forms of evaluation and control	**Relative share in the total score**
Sessional evaluation: exam	**0.4**
Semester (ongoing) assessment:	**0.6**
Forms of semester control: Colloquiums	
- Osteology	**0.15**
- Arthrology	**0.15**
-Splanchnology (macro and micro)	**0.2**
- Dissecrions (head, neck, back, thorax)	**0.15**
- Dissections (upper and lower limbs)	**0.15**
- Central nervous system - (macro and micro)	**0.2**

ANOTATION

For the mandatory course "Anatomy and Histology"

Human Anatomy is a morphological discipline studying the structure of the human body. A number of anatomical disciplines have formed within general anatomy. The main ones are Systematic and Topographic Anatomy.

Systematic anatomy studies the structure of the human body by systems and organs at different levels of organization - macroscopic, light microscopic and electron microscopic. In this way, special histology is integrated as the equivalent of microscopic anatomy. This way of studying provides the best opportunities to understand the arrangement of systems and organs, as a basis for studying physiology, pathology and clinic.

Topographic Anatomy is a natural cantinuation of the teaching of systematic anatomy. It studies the human body by regions on a dissection principle. Dissection of the human body, preserved in a special way, is the main anatomical method that is widely used in studying its structure. It creates conditions for direct acquisition of anatomical knowledge during layer-by-layer preparation of skin, subcutaneous tissue, fascia, muscles, blood vessels, nerves, organs and systems, according to the needs of clinical medicine. The teaching of Topographic Anatomy is a continuous process that begins with second-year students, continues with the training of the future physicias in the stages of their postgraduate qualification and in conducting clinical research, medical manipulations, operative interventions, applying new methods of transplantation and anesthesia.

Goals

The main goal of the discipline is to acquire in-depth knowledge of the normal structure of of the human body`s organs and systems. This is a mandatory prerequisite for studying the pathological processes in various diseases.

Main tasks of the curriculum

- ✓ Study of the macroscopic structure of organs and systems in the human body.
- ✓ Study of the microscopic structure of organs in the human body..
- ✓ Study of embryonic development of organs and systems in the human body.
- ✓ Study of Topographic and X-ray anatomy of organs and tissues in the human body.

Expected results

Acquiring comprehensive knowledge of the macroscopic and microscopic structure, systematic, topographic and X-ray Anatomy of organs and systems in the human organism.

Determining the location of bony and other landmarks of the body, the skeletotopy and syntopy of the various organs, determining the innervation areas of the surface of the head, neck, torso and limbs, the projections of the main vessels and nerves, the location of the subcutaneous venous vessels, recognizing the histological (macroscopic) structure of the organs and ability for differential histological diagnosis of the same.

Mastering the dissection techniques of preserved cadaver material using scalpel and forceps.

Current control and final exam on students' knowledge of Anatomy and Histology.

Current control is carried out through colloquiums on the individual sections of the discipline.

I. ***Colloquiums:***

1. Osteology
2. Arthrology
3. Splanchnology - combined (macro- and micro)
4. Dissection course: back, head, neck, chest, abdomen and pelvis
5. Dissection course: limbs
6. CNS and sensory organs - combined (macro and micro)

The final exam takes place during the summer session of the 2nd year (after the fourth semester), and consists of the following parts:

✓ practical exam in anatomy on 10 questions from each section (bones, joints, upper limb, lower limb, internal organs, head, trunk, brain and spinal cord and sensory organs) and in histology on 6 histological preparations

✓ theory exam with combinations including 6 questions, on one of the following sections:

- bones, joints and muscles
- internal bodies (in written form)
- сърдечно-съдова и лимфна система, кръвотворни органи
- central nervous system and sensory organs (in written form)
- peripheral nervous system (in written form)
- topographic anatomy

CONTENT OF THE CURRICULUM PROGRAM

	ANATOMY AND HISTOLOGY	
	1. INTRODUCTION TO ANATOMY, HISTOLOGY AND EMBRYOLOGY	
	LECTURE COURSE - 4 HOURS	
№	Topic of the lecture	Hours
	1st semester	
1.	Introduction to Anatomy, Histology and Embryology. Subject, purpose, tasks, relations with other biological sciences and the place of anatomy in medical education. Anatomical terminology (nomenclature). Levels of construction of the human organism. Orientation in the human body.	2
2.	Methods of study of the human body structures in norm at the different levels of organization.	2
	2-4. OSTEOLOGIA. ARTHROLOGIA. IMAGING ANATOMY. MYOLOGIA.	
	LECTURE COURSE - 11 HOURS	
№	Topic of the lecture	Hours
	1st semester	
1.	Musculoskeletal system - definition and parts. Osteology. Shape, internal structure and classification of the bones. The bone as an organ.	3
2.	Study of connections between bones - Arthrology. Joints. Biomechanics of joints.	2
3.	An introduction to Imaging Anatomy and its relevance to clinical disciplines. X-ray Anatomy, Echography, Computed Tomography, Gamma chamber Scintigraphy, Magnetic Resonance.	3
4.	Myology. Shape of muscles. The muscle as an organ - organization, additional structures and mechanics of the muscles.	3
	2. OSTEOLOGIA	
	PRACTICAL EXERCISES (SEMINARS) - 18 hours	
№	**Topics**	Hours
	1st semester	
1.	Anatomical terminology. The human skeleton. Tissues and organs of the skeletal system. Functions of skeleton.	1

2.	Axial skeleton: vertebral column, ribs and sternum (thoracic cage).	2
3.	Skeleton of the upper limb: bones of the pectoral girdle and bones of the upper limb.	2
4.	Pelvic girdle - os coxae.	2
5.	Skeleton of the lower limb	2
6.	Skull (skeleton of the head) - general features. Cranial bones - Cranium cerebrale (Neurocranium): occipital bone, sphenoid bone, parietal bone, frontal bone, temporal bone and ethmoid bone.	4
7.	Cranium faciale (Viscerocranium).	2
8.	The skull as a whole - cranial calvaria (skull cap) and cranial base (external and internal surface of the base). Anterior view of the skull (norma facialis). Orbit. Bony nasal cavity. Lateral view of the skull (norma lateralis). The temporal fossa, the intratemporal fossa, the pterygopalatine fossa.	2
9.	**Colloquium in Osteology.**	1
	ARTHROLOGIA. X-RAY ANATOMY OF THE BONE-JOINT APPARATUS	
	PRACTICAL EXERCISES (SEMINARS) - 12 HOURS	
№	**Topics**	Hours
	1st semester	
1.	Basic information about the joints.	1
2.	Joints, mechanics and X-ray Anatomy of the spine. Joints of the ribs to the vertebral column and sternum. Chest as a whole. Mechanics and X-ray Anatomy of the thorax. Joints of the vertebral column to the skull.	2
3.	Joints of the pectoral girdle and joints of the upper limb. Mechanics and X-ray anatomy of the pectoral girdle and the upper limb.	2
4.	Joints of the pelvic girdle. The pelvis as a whole. X-ray anatomy of the pelvis.	2
5.	Joints of the lower limb and mechanics of the lower limb. The foot as a whole. X-ray Anatomy of the lower limb.	2
6.	Joints of the skull bones. Temporomandibular joint. Age pecularities and X-ray Anatomy of the skull.	2
7.	**COLLOQUIUM IN ARTHROLOGV AND X-RAY ANATOMY OF THE BONE-JOINT APPARATUS.**	1
	4. MYOLOGIA	
	The study of muscles is included in dissection courses with Topographic Anatomy of the back, head, neck, chest, abdomen, pelvis, upper and lower extremities.	
	5. SPLANCHNOLOGIA	
	LECTURE COURSE - 24 HOURS	
№	**Topics**	Hour
	II-nd semester	
1.	General principles of structure of the internal organs.	1
2.	Digestive system. Morphology. Ontogenesis. Oral cavity. Ontogenesis and malphormations of the face and oral cavity.	1
3.	Teeth. Tongue. Salivary glands.	2
4	Pharynx. Esophagus. Stomach.	2
5.	Small intestine. Large intestine.	2
6.	Liver.	1
7.	Galbadder and bile ducts. Pancreas.	1
8.	Peritoneum	1
9.	General principles of construction of the respiratory system. Ontogenesis. Nose: external nose and nasal cavity.	1
10.	Larynx. Trachea. Primary bronchi.	1
11.	Lungs. Pleura.	2

12.	Urinary system.	2
13.	Reproductive systems. Development of the urinary and reproductive system.	1
14.	Female reproductive system.	2
15.	Male reproductive system.	2
16.	Endocrine system - general data. Pituitary gland. Hypothalamic-pituitary system. Epiphysis.	1
17.	Thyroid gland. Parathyroid glands. Adrenal gland. Gastroenteropancreatic endocrine system.	1
	5. SPLANCHNOLOGIA	
	PRACTICAL EXERCISES - 52 HOURS	
№	Topic	hours
	Macroscopic anatomy	**26**
	II-nd semester	
1.	Internal organs. General plan of structure of the hollow and parenchymal organs.	2
2.	Digestive system. Oral cavity: parts, walls and organs in it.	2
3.	Major salivary glands: parotid, submandibular and sublingual glands. Pharynx.	2
4.	Esophagus. Stomach.	2
5.	Small intestine. Large intestine.	2
6.	Liver. Pancreas.	2
7.	Respiratory system. Nose. Larynx. Trachea. Primary bronchi.	2
8.	Lung.	2
9.	Urinary system. Kidney. Excretory tracts (small calyces, large calyces, renal pelvis; ureter). Urinary bladder.	3
10.	Male reproductive system. Testis. Epididymis. Ductus deferens. Seminal vesicle. Prostate. Bulbourethral gland. Penis. Male urethra.	3
11.	Female reproductive system. Ovary. Fallopian tube. Uterus. Vagina. External female genitalia.	2
12.	**Colloquium**	2
	Microscopic Anatomy (Histology)	**26**
	II-nd semester	
1.	Digestive system. Lip. Tooth. Tongue. Palatine tonsil.	2
2.	Major salivary glands: parotid, submandibular and sublingual glands. Pharynx (incl. Pharyngeal tonsil).	2
3.	Esophagus. Stomach.	2
4.	Small intestine - duodenum, mesenteric small intestine. Large intestine (incl. appendix).	2
5.	Liver. Gallbladder. Pancreas.	2
6.	Respiratory system. Nasal mucosa (respiratory part). Larynx. Trachea.	2
7.	Lung.	2
8.	Urinary system. Kidney. Ureter. Urinary bladder.	2
9.	Male reproductive system. Testis. Epididymis. Ductus deferens. Seminal vesicle. Prostate gland. Corpus spongiosum of the penis.	2
10.	Female reproductive system. Ovary. Fallopian tube. Uterus. Vagina.	2
11.	Endocrine system: pituitary gland and pineal gland.	2
12.	Endocrine system: thyroid gland, parathyroid glands, adrenal glands.	2
13.	**Colloquium**	2
	6. ANGIOLOGIA	
	LECTURE COURSE - 12 HOURS	
№	Topics	hours
	II-nd semester	

1.	Vascular (circulatory) system. General data. Organizational plan of the circulatory system. Anastomoses. Collateral circulation. Ontogenesis of the circulatory system.	2
2.	Heart. External relief, cavities, flaps. Structure of the heart wall. Blood supply and innervation of the heart. Pericardium. Topographic anatomy of the heart. Ontogenesis.	2
3.	Vascular wall: arteries, veins, microcirculatory vascular bed.	2
	III-rd semester	
1.	Major arterial and venous vessels. Small and large circle of blood circulation - an overview.	2
2.	Lymphatic system - overview and structural plan. Lymph vessels. Lymphatic organs: principle structure. Lymphatic follicles.	2
3.	Lymph nodes. Palatine tonsil. Lien. Thymus. Spinal cord.	2
	6. ANGIOLOGIA	
	PRACTICAL EXERCISES - 12 HOURS	
№	Topics	Hours
	Macroscopic anatomy	**4**
	II-nd semester	
1.	Vascular (circulatory) system. Heart. Pericardium.	2
2.	Blood vessels: arteries, microcirculatory vascular bed, veins. Arterio-venous anastomoses. Lymph vessels.	2
	Microscopic Anatomy (Histology)	**4**
	II-nd semester	
1.	Vascular system. Heart. Pericardium.	2
2.	Arteries. Microcirculatory vascular bed. Veins.	2
	IV-th semester	
1.	Hematopoietic and lymphopoietic organs: central ones - red bone marrow, thymus; peripheral ones - lymph node, spleen. Mucosa-associated lymphoid tissue.	2
	7. SYSTEMA NERVOSUM CENTRALE / CENTRAL NERVOUS SYSTEM	
	LECTURE COURSE – 28 hours	
№	Topic	Hours
	III-rd semester	
1.	Nervous system: general data and principles of organization of the nervous system. Ontogenetic development of the nervous system. Central nervous system - general data.	1
2.	Spinal cord: macroscopic structure and cytoarchitectonics.	2
3.	Spinal cord: composition of spinal cord white matter funiculi, formation of the spinal nerves. Meninges and blood supply of the spinal cord.	2
4.	Brain: general features, parts. Formation of the cranial nerves.	1
5.	Brainstem - medulla oblongata, pons.	2
	IV-th semester	
6.	Brainstem - Mesencephalon (midbrain). Reticular formation.	2
7.	Cerebellum. Fourth ventricle	2
8.	Diencephalon. Third ventricle.	2
9.	Telencephalon: basal nuclei, mantle, Rhinencephalon, structures of the limbic system. Lateral ventricles.	2
10.	Telencephalon`s cortex: cytoarchitectonics and myeloarchitectonics; localization of functions in the cortex; functional asymmetry of the cortex.	2
11.	Cerebral meninges and blood supply. Blood-brain barrier. Liquor Circulation. Blood-liquor barrier.	2
12.	Functional systems in central nervous system - general features and classification. General sensory systems. Specific sensory systems.	2
13.	Motor systems: pyramidal system and extrapyramidal system. Nervous-endocrine system. Central transmitter systems.	2

14.	Limbic system - functional characteristics.	2
15.	General principles of structure of the autonomic (vegetative) nervous system. Vegetative innervation of internal organs.	2
	7. SYSTEMA NERVOSUM CENTRALE	
	EXERCISES - 28 hours	
№	Topic	Hours
	Macroscopic Anatomy (Dissection Course)	**24**
	IV-th semester	
1.	Meninges and their formations. Blood supply to the brain. Parts of the brain. Places of emergence of the cranial nerves (CN) at the brain base. Internal surface of the cranial base - places for the passage of the CN through it.	2
2.	Telencephalon: cerebral hemispheres. External relief of the hemispheres - lobes, sulci, gyri. Insula.	2
3.	Basal nuclei of the hindbrain. White matter of the hindbrain. Lateral ventricules.	2
4.	Olfactory brain (Rhinencephalon). Limbic system.	2
5.	Diencephalon. Third ventricle. Reticular formation.	2
6.	Mesencephalon (midbrain).	2
7.	Pons. Medulla oblongata.	2
8.	Cerebellum. Fourth ventricle	2
9.	Spinal cord. External and internal structure. Cytoarchitectonics. Composition of the white matter bundles of the spinal cord. Formation of spinal nerves.	2
10.	Functional systems in the CNS. Motor systems: pyramidal motor system, oculomotor system, extrapyramidal system.	2
11.	Functional systems in the CNS. Sensory systems.	2
12.	**Colloquium in CNS.**	2
	Microscopic Anatomy (Histology)	**4**
	IV-th semester	
1.	Spinal cord. Spinal and autonomic ganglion. Nerve. Brainstem.	2
2.	Cerebellum. Telencephalon.	2
	8. ORGANA SENSUUM / SENSORY ORGANS	
	LECTURE COURSE - 6 hours	
№	Topic	Hours
	IV-th semester	
1.	Sensory organs - general data. Organ of vision.	2
2.	Organ of hearing and balance	2
3.	Gustatory organ. Olfactory organ.	1
4.	Skin and skin appendages.	1
	8. ORGANA SENSUUM	
	PRACTICAL EXERCISES - 10 hours	
№	Topic	Hour
	Microscopic Anatomy (Histology)	**10**
	IVth semester	
1.	Organ of vision. Eyeball.	2
2.	Eyelid. Lacrimal gland. Organ of hearing and balance. Inner ear - bony and membranous cochlea.	2
3.	Gustatory organ. Olfactory organ.	2
4.	Skin and skin appendages. Hairless (thick) skin. Hairy (thin) skin. Nail.	2
5.	Mammary gland - non-lactating and lactating.	1
6.	**Colloquium**	1

	9. DISSECTION COURSE WITH TOPOGRAPHIC ANATOMY - BACK, HEAD, NECK, THORAX, ABDOMEN, PELVIS	
	LECTURE COURSE - 4 HOURS	
№	Topic	Hours
	III-rd semester	
1.	Topographic anatomy: subject and tasks. Clinical Anatomy (Applied Anatomy).	1
2.	Topographic anatomy of the back	2
3.	Topographic anatomy of the head.	3
4.	Topographic anatomy of the neck	2
5.	Topographic anatomy of the thorax.	3
6.	Topographic anatomy of abdomen	4
7.	Topographic anatomy of the pelvis	1
	9. A. DISSECTION COURSE WITH TOPOGRAPHIC ANATOMY - BACK, HEAD, NECK, THORAX, ABDOMEN, PELVIS	
	PRACTICAL EXERCISES - 60 hours	
№	Topic	Hours
	III-rd semester	
	I. Dissection of the back	
1.	General instructions for dissection course on cadaver. Topographic and anatomical peculiarities of the back- regions. Shape and surface anatomy of the back. Skin incisions. Skin removal. Cutaneous nerves of the back. Posterior region of the neck (regio colli posterior) - superficial layer (cutaneous nerves, occipital artery). Superficial muscles of the back. **Subject for discussion:** Dorsal rami (branches) of spinal nerves (nn. spinales - rami dorsales).	2
2.	Nerves and blood vessels of the superficial muscles of the back. Deep back muscles of ventral and dorsal embryonic origin. **Subject for discussion**: Muscles of the back. Fasciae.	2
3.	Posterior region of the neck (regio colli posterior) - deep layer. Suboccipital triangle (trigonum suboccipitale). Vertebral region (regio vertebralis). Lumbar region (regio lumbalis). Articulations and ligaments of the spinal column. **Subject for discussion: Nerves and blood vessels of the back.**	2
4.	Opening of the vertebral canal - laminectomy. **Subject for discussion**: Vertebral canal, spinal cord - general data, external morphology; meninges and blood supply of the spinal cord. Spinal ganglions. Formation of the spinal nerves.	4
	II. Dissection of the head, neck, thorax, abdomen and pelvis.	
5.	Turning the corpse. Topographic regions of the head, neck, thorax and abdomen. Palpable bony landmarks and surface anatomy. Skin incisions. Skin removal. Cutaneous nerves of the thorax and abdomen. **Subject for discussion**: Veins of the head and neck. Ventral rami of the spinal nerves. Cervical plexus (plexus cervicalis). Anterior rami of the thoracic nerves (nn. intercostales).	2
6.	Lateral region of the face (regio faciei lateralis) - superficial layer, superficial veins, facial nerve, muscles of the facial expression, branches of facial nerve for muscles of the face. Subcutaneous objects of the neck: superficial veins, subcutaneous muscle of the neck – platysma, cutaneous nerves of cervical plexus. Superficial layer - superficial veins and nerves. lnfraclavicular region (regio infraclavicularis). Regio mammalis - fascia, muscles. Anterior abdominal wall - subcutaneous layer; inguinal region - superficial veins and nerves. Reflection of the external oblique muscle (m. obliquus abdominis externus). lnguinal canal. **Subject for discussion**: Veins o of the head and neck. Facial nerve (CN VII). Cervical fascia. Superficial veins of the thoracic wall and superior part of the anterior abdominal wall.	2

7.	Regio parotideomasseterica - superficial layer. Temporal region - superficial layer, blood vessels and nerves, temporal fascia. Cervical fascia - superficial layer (lamina superficialis). Regio sternocleidomastoidea - presenting of sternocleidomastoid and suprahyoid muscles. Submandibular triangle. Regio infraclavicularis - muscles, triangles, blood vessels, nerves. Axillary region (regio axillaries). Pectoral muscles. Reflection of the internal oblique muscle (musculus obliquus abdominis internus) and demonstration of the transverse abdominal muscle. **Subject for discussion:** Subclavian artery and axillary artery. Brachial plexus - formation, nerves for the pectoral girdle.	2
8.	Mastoid region (regio mastoidea). Carotid triangle. Infrahyoid muscles. Reflecting of the sternocleidomastoid muscle. Hypoglossal nerve. Thoracic wall. Internal thoracic artery. Axillary region - nerves of the upper limb. Rectus abdominis muscle - sheath. Inguinal canal. **Subject for discussion**: Spermatic cord (funiculus spermaticus). Hypoglossal nerve (CN XII).	2
9.	Orbltal region (regio orbltalis) - superficial (palpebral) section. Muscles around palpebral fissure. Zygomatic region (regio zygomatica). Infraorbltal region (regio infraorbltalis). Reflection of sternocleidomastoid muscle. Superficial muscle layer of the neck. Carotid triangle. Common carotid artery. Internal and external carotid arteries. Complete dissection of the axillary region (regio axillaries). Axillary artery, lymph nodes. Reflection of the rectus abdominis muscle. Openinig of the abdominal cavity. Anterior abdominal wall - posterior surface. **Subject for discussion**: Common carotid artery. Internal and external carotid arteries - branches.	4
10.	**SEMINAR:** Abdominal cavity - parts. Peritoneum. Skeletotopy, holotopy and syntopy of the abdominal organs.	2
11.	Regio buccalis. Regio mentalis. Lateral region of the neck (trigonum colli laterale) - superficial objects. Neurovascular bundle of the neck. Cervical veins. Accessory nerve. Vagus nerve. Cervical part of thoracic duct. Opening of the thoracic cavity. Anterior mediastinum. Superior mediastinum - retrosternal objects. Inferior part of the abdominal cavity - peritoneal spaces and formations. Abdominal aorta - unpaired branches. Superior mesenteric artery. **Subject for discussion**: Abdominal aorta - unpaired branches. Accessory nerve (CNXII).	4
12.	**SEMINAR:** Pleura. Pericardium. Mediastinum. Skeletotopy, holotopy and synotopy of thoracic organs.	2
13.	Regio frontoparietooccipitalis. Anterior region of the neck (regio colli anterior) - reflecting of the infrahyoid muscles. External carotid artery - branches. Thyroid gland. Middle mediastinum. Pericardium. Removal and opening of the small intestine. Inferior mesenteric artery. **Subject for discussion**: System of superior cava vein. Brachiocephalic veins.	2
14.	**SEMINAR:** Heart. Topography and boundaries. Removal of the heart - external morphology. Dissection of the heart: internal structure, cavities, valves; blood vessels. Inspection of the aorta.	2
15.	Temporal region (regio temporalis) - temporal muscle (m. temporalis). Regio parotideomasseterica - deep layer. Regio colli anterior - suprahyoid muscles. Reflecting of myohyoidal muscle. Branches of the external carotid artery. Hypoglossal and lingual nerves., glossopharyngeal nerve, vagus nerve (n. vagus) and accessory nerve. Superior mediastinum. Intermediate and prevertebral objects. Superior part of the abdominal cavity - bursa omentalis. Celiac trunk. Reflection and preparation of the large intestine. **Subject for discussion**: Thoracic aorta - branches. Glossopharyngeal nerve (CNIX)	2
16.	Terminal branches of the external carotid artery. Facial nerve (CN VII). Sternocleidomastoid region - deep layer. Regio colli lateralis. Omoclavicular and omotrapezoid triangle. Hilum of the lungs. Bronchi, blood vessels, nerves and lymph nodes. Removal and preparation of the stomach. Complete presentation of the branches of the celiac trunk. System of the portal vein. **Subject for discussion**: System of inferior vena cava. System of portal vein. Intersystemic anastomoses.	2

17.	Infratemporal region-superficial objects (maxillary artery). Regio colli lateralis - deep layer. Removal and preparation of the lungs. Skeletotopy. Removal and preparation of the liver, duodenum, pancreas and spleen. **Subject for discussion**: Vagus nerve (CNX). Maxillary artery.			2
18.	Infratemporal region - deeply situated objects. Trigeminal nerve (CNV). Muscles of chewing. Prevertebral lamina of cervical fascia. Posterior mediastinum. Thoracic aorta. Thoracic duct. Retroperitoneal space. Renal hilum. Suprarenal gland. Inferior vena cava. **Subject for discussion**: Trigeminal (CNV) nerve. Veins of the thoracic wall and superior abdominal wall.			2
19.	Connection between head and neck. Cervical part of the sympathetic trunk. Veins of the thoracic wall. Thoracic part of the sympathetic trunk. Paired branches of the abdominal aorta. Abdominal part of the sympathetic trunk. Pelvis - peritoneal part. **Subject for discussion**: Sympathetic trunk. Abdominal aorta - paired branches.			2
20.	Craniocerebral topography. Removal of the brain. Orbltal region - superior part. NECK: Internal cervical organs. Skeletotopy and syntopy. Muscles of the thorax. Definitive presentation of the objects on the inner surface of the thoracic wall. Reflection of the kidneys and suprarenal glands. Posterior abdominal wall - muscles. Lumbar plexus. Pelvis - subperitoneal part. **Subject for discussion**: Lumbar plexus - origin and formation, branches. Internal and external iliac arteries.			4
21.	Orbltal region - middle and inferior part. Cranial nerves. Deep muscles of the neck. Diaphragm. Pelvis - subperitoneal part. Sacral plexus. Subject for discussion: Exrtinsic muscles of the eye. Cranial nerves. Ophtalmic artery.			2
22.	Interior of the base of the skull (basis cranii interna). Pelvis - subcutaneous part, superficial layer. **Subject for discussion:** Perineum. Pudendal nerve. Internal pudendal artery.			2
23.	Pelvis - subcutaneous part - deep layer. **Subject for discussion:** Parasympathetic nerves from spinal origin			2
24.	Dissection of external genitalia and pelvic organs			2
25.	Discussion on the crafted organs by regions of the back, head, neck, chest, abdomen and pelvis.			2
26.	**Colloquium on back, head, neck, chest, abdomen and pelvis (cadaver).**			2
	9. B. DISSECTION COURSE WITH TOPOGRAPHIC ANATOMY - UPPER AND LOWER LIMBS			
	LECTURE COURSE - 4 hours			
№	Topic			Hours
	IVth semester			
1.	Topographic anatomy of the upper limb			2
2.	Topographic anatomy of the lower limb.			2
	9B. DISSECTION COURSE WITH TOPOGRAPHIC ANATOMY - UPPER AND LOWER LIMBS			
	PRACTICAL EXERCISES - 20 hours			
	Topic			
	IVth semester			
№	Topic for discussion	Upper limb dissection	Lower limb dissection	Hours

1.	Topographic anatomical regions of the limbs. Superficial veins and cutaneous nerves of the limbs.	Skin incisions; skin removal in the deltoid, axillary and elbow regions. Dissection of superficial veins and skin nerves.	Skin incisions; skin removal in the gluteal, thigh and knee regions. Dissection of superficial veins and skin nerves.	2
2.	Brachial and sacral plexus - formation and main branches. Topographic-anatomical features of the deltoid, scapular and gluteal regions.	Deltoid region - deltoid muscle. Subdeltoid space - vessels and nerves. Scapular region - subcutaneous layer.	Gluteal region - superficial layer, gluteal fascia, gluteus maximus muscle. Posterior area of the thigh - superficial layer: cutanous nerves, fascia.	2
3.	Axillary artery. External and internal iliac artery. Topographic-anatomical features of the anterior brachial and anterior elbow regions. Topographic-anatomical features of the posterior femoral and posterior knee regions.	Presentation of the brachial plexus, axillary artery and veins. Anterior brachial region - superficial layer, fascia, muscles, vessels. Anterior elbow region - suprafascial layer (veins, cutaneus nerves).	Gluteal region - deep layer: muscle layers, vascular-nerve bundles. Posterior region of the thigh - muscles, vessels, nerves. Posterior region of the knee - surface layer, fascia. Popliteal fossa - vessels, nerves, muscles.	2
4.	Lumbar plexus - formation branches. Femoral and popliteal artery. Brachial muscles, arteries and nerves. Topographic-anatomical features of the anterior femoral region.	Anterior brachial region (vascular-nerve bundle) Anterior cubital region – deep layer (cubltal fossa). Ulnar grooves and vascular-nerve bundles.	Representation of the sacral plexus. External and internal iliac arteries - branches. Anterior group of muscles around the hip joint. Anterior thigh region – subcutaneous layer, fascia, spaces and canals (lacunae, femoral and obturator canal). Femoral triangle.	2
5.	Topographic-anatomical features of the posterior brachial region, the posterior elbow region and the anterior region of the knee.	Scapular region - deep layer, muscles, vessels, nerves. Posterior brachial region – subcutaneous layer, fascia, muscles, vessels and nerves. Posterior elbow area.	Anterior region of the thigh - deep layer: femoral artery and vein, adductor canal. Anterior area of the knee.	2
6.	Topographic-anatomical features of the anterior region of the forearm and the anterior region of the lower leg	Removal of the skin on the forearm and back of the hand. Dissection of the superficial veins and nerves of the forearm and back of the hand.	Removal of the skin on the lower leg and the dorsal part of the foot. Development of the superficial veins and cutaneous nerves of the lower leg and the dorsal part of the foot.	2

7.	Arteries, veins and nerves of the forearm. Topographic anatomical features of the dorsal part of the foot.	Forearm fascia. Anterior area of the forearm - muscle layers, vascular-nerve bundles.	Lower leg fascia. Anterior region of the lower leg - muscles, vessels, nerves. Dorsal part of the foot - fascia, muscles, vessels, nerves.	2
8.	Arteries, veins and nerves of the lower leg. Topographic anatomical features of the posterior region of the forearm and wrist.	Posterior region of the forearm. Posterior carpal region – fascia, vessels and nerves (osteofibrous canals).	Posterior region of the lower leg - fascia, muscle layers, vessels and nerves. Heel region - fascial formations, vessels.	2
9.	Arteries, veins and nerves of the hand. Topographic anatomical features of the palm and the fingers.	Removal of the skin on the palm and fingers. Anterior carpal area. Palm - palmar aponeurosis, medial, middle and lateral fascial compartment. Fingers - vessels and nerves.	Removal of the skin on the foot and toes. Foot - aponeuroses, medial, middle and lateral compartment. Fingers - vessels and nerves.	2
10.	Arteries, veins and nerves of the foot. Topographic-anatomical features of the foot and toes.	Palm - deeply located objects: tendon sheaths, deep palmar arch, muscles, nerves. Fingers - tendon sheaths.	Стъпало – дълбоко разположени обекти (сухожилни влагалища, мускули и нерви). Пръсти – сухожилни влагалища.	2
	Colloquium on upper and lower limbs.			

Questionary

Anatomy and histology
Specialty "Medicine"

Educational and qualification degree "MASTER", professional qualification "PHYSICIAN"

I. Osteology and Arthrology

1. General teaching about bones. Shape and internal structure of bones. Bone as an organ.
2. Development and growth of bones.
3. Skull roof.
4. Internal surface of the skull base.
5. Outer surface of the skull base.
6. Lateral surface of the skull.
7. Eye socket (orbit).
8. Bony skeleton of the nasal cavity.
9. Connections of bones - types. Continuous connections.
10. Discontinuous connection by joints. Device and biomechanics of the joint.
11. Connections of the spine. The spine as a whole. Age characteristics.
12. Connections of the thorax. Thorax as a whole. Age characteristics.

13. Connections of the skull with the spine.
14. Connections of the had bones. Age characteristics.
15. Mandibular joint.
16. Joints of the shoulder girdle. Age characteristics.
17. Shoulder joint. Age characteristics.
18. Elbow joint. Connections of the bones of the forearm. Age characteristics.
19. Wrist joints. Age characteristics.
20. Carpal-metacarpal joints. Joints of the fingers of the hand. Age characteristics.
21. Joints and ligaments of the pelvic girdle. The pelvis as a whole. Age characteristics.
22. Hip joint. Age characteristics.
23. Knee joint. Age characteristics.
24. Connections of lower leg bones. Upper ankle joint. Age characteristics.
25. Joints of the sole. Age characteristics.
26. Tarso-metatarsal joints. Joints of the toes. Age characteristics.
27. General principles of Imaging Anatomy.

II. Myology

28. Skeletal muscles - structure; types of muscles. The muscle as an organ.
29. Accessory formations of muscles and tendons. Internal and external mechanics of muscles
30. Mimic muscles.
31. Masticatory muscles.
32. Superficial muscles of the back.
33. Deep muscles of the back. Fascia of the back.
34. Muscles of the neck. Superficial and sublingual muscles.
35. Deep neck muscles. Cervical fascia.
36. Muscles of the thorax: pectoral muscles of the shoulder girdle, proper muscles of the thoracic wall. Pectoral fascia.
37. Diaphragm.
38. Abdominal muscles. Fascia of the abdominal wall, function of the abdominal muscles.
39. Inguinal canal.
40. Muscles of the shoulder girdle (proper).
41. Brachial muscles. Brachial fascia.
42. Muscles of the forearm - anterior group. Forearm fascia.
43. Muscles of the forearm - lateral and posterior groups. Forearm fascia.
44. Hand muscles.
45. Muscles around the hip joint.
46. Muscles of the thigh. Femoral fascia.
47. Muscles of the lower leg - anterior and lateral groups.
48. Muscles of the lower leg - posterior group. Lower leg fascia.
49. Muscles and fascia of the foot.

III. Splanchnology

50. General principles of structure of the internal organs.
51. Digestive system - general principles of structure of its organs, ontogenesis.
52. Oral cavity - parts. Ontogenesis and malforamtions of the face and oral cavity.
53. Oral cavity - oral vestibule. True oral cavity. Lips. Cheeks.
54. Oral cavity - soft and hard palate. Oral mucosa.
55. Tongue. Structure. Blood supply, lymphatic drainage and innervation.
56. Teeth - structure of the teeth. Blood supply, lymphatic drainage and innervation. Embryonic development of teeth.
57. Teeth - temporary and permanent dentition. Eruption of milk and permanent teeth.

58. Oral isthmus. Tonsils (tonsils). Waldeyer's lymphoid ring.
59. Glands of the oral cavity - small and large salivary glands. Blood supply, lymphatic drainage and innervation.
60. Pharynx. Topography. Structure. Blood supply, lymphatic drainage, innervation.
61. Esophagus - topography, structure. Blood supply, lymphatic drainage, innervation.
62. Stomach - shape, parts, topography. X-ray image. Blood supply, lymphatic drainage, innervation.
63. Stomach - wall structure.
64. Duodenum. Topography. Structure of the wall. Blood supply, lymphatic drainage, innervation.
65. Mesenteric small intestine (jejunum and ileum). Topography. A device on the wall. Blood supply, lymph outflow, innervation.
66. Colon: cecum, appendix. Topography. A device on the wall. Blood supply, lymphatic drainage, innervation.
67. Large intestine: colon. Topography. Structure of the wall. Blood supply, lymphatic drainage, innervation.
68. Colon: rectum. Topography. Structure of the wall. Blood supply, lymphatic drainage, innervation.
69. Pancreas. Topography. Microscopic construction of the exocrine and endocrine parts. Blood supply, lymphatic drainage, innervation.
70. Liver - topography, external morphology. Parts and segments of the liver. Blood supply, lymphatic drainage, innervation.
71. Liver. Internal structure - liver lobules, liver cells, sinusoids, bile ducts of the liver.
72. Gallbladder and extrahepatic bile ducts. Blood supply, lymphatic drainage, innervation.
73. Abdomen (peritoneum) - general data, relationship with the abdominal organs. Course in descending and transverse direction.
74. Peritoneal cavity: upper abdominal region, lower abdominal region, pelvic region; peritoneal formations in them; communications.
75. Respiratory system. General principles of the structure. Ontogenesis.
76. Outer nose. Nasal cavity. Blood supply, lymphatic drainage, innervation.
77. Paranasal cavities (sinuses).
78. Larynx - cartilages, joints between cartilages, muscles.
79. Larynx - topography, cavity, mucosa. Blood supply, lymph outflow, innervation.
80. Breathing tube. Bronchi. Topography. Structure of the wall. Blood supply, lymph outflow, innervation.
81. Lungs. Shape, size, topography. X-ray anatomy. Blood supply, lymphatic drainage, innervation. Parts, segments.
82. Lungs – anatomical-functional units - particles, acini.
83. Pleura, pleural cavity. Borders of the parietal pleura.
84. Urinary-Reproductive system. General principles of structure. Ontogenis.
85. Kidney - shape, topography, attachment apparatus. Blood supply, lymphatic drainage, innervation. Renal malformations.
86. Kidney - internal structure; endocrine system of the kidneys.
87. Excretory tracts of the kidney - renal pelvis, ureter. Topography. X-ray image. Blood supply, lymphatic drainage, innervation.
88. Urinary bladder. Topography. Structure of the wall. Blood supply, lymphatic drainage, innervation. Malformations.
89. Male and female urethra. Topography. Structure of the wall. Blood supply, lymphatic drainage, innervation.
90. Reproductive systems (sexual organs): ontogenesis.
91. Tesis; epididymis. Topography. Macroscopic structure. Topography. Microscopic structure. Blood supply, lymphatic drainage, innervation.
92. Ductus defference; seminal vesicles. Topography. Microscopic structure. Blood supply, lymphatic drainage, innervation.

93. Seminal cord. Sheaths of the testis. Scrotum.
94. Prostate gland; bulbourethral glands. Topography. Microscopic structure. Blood supply, lymphatic drainage, innervation.
95. Male copulatory organ (penis). Macroscopic and microscopic structure. Blood supply, lymphatic drainage, innervation.
96. Ovary. Topography. Microscopic structure. Blood supply, lymphatic drainage, innervation.
97. Uterine tube. Topography. Microscopic structure. Blood supply, lymphatic drainage, innervation
98. Uterus. Topography. Microscopic structure. Blood supply, lymphatic drainage, innervation.
99. Vagina; external female genitalia. Topography. Microscopic structure. Blood supply, lymphatic drainage, innervation.
100. Perineum.
101. Mammary gland. Topography. Microscopic structure. Blood supply, lymphatic drainage, innervation.

IV. Endocrine system
102. Endocrine glands. General anatomical features.
103. Pituitary gland - general data. Adenohypophysis. Microscopic structure. Connections of the adenohypophysis with the hypothalamus.
104. Pituitary gland - general data. Neurohypophysis. Microscopic structure. Connections of the neurohypophysis with the hypothalamus.
105. Epiphysis (pineal gland). Topography. Microscopic structure. Blood supply, lymphatic drainage, innervation.
106. Thyroid gland. Topography. Microscopic structure. Blood supply, lymphatic drainage, innervation.
107. Parathyroid glands. Topography. Microscopic structure Blood supply, lymphatic drainage, innervation.
108. Adrenal glands. Topography. Microscopic structure. Blood supply, lymphatic drainage, innervation. Paraganglia.
109. Gastro-entero-pancreatic endocrine system. Microscopic structure.

V. Cardiovascular system, lymphatic system
110. Blood circulatory system. General data.
111. Heart - topography, external morphology, X-ray Anatomy of the heart.
112. Cavities of the heart. Heart valves.
113. Structure of the wall of the heart. Fibrous skeleton. Cardiac septum.
114. Impulse conduction system. Innervation of the heart.
115. Blood and lymphatic vessels of the heart.
116. Pericardium. Pericardial cavity.
117. Ontogenesis of the heart.
118. Organizational plan of the circulatory system. Arterial and venous parts of the circulatory system. Anastomoses - types. Collateral circulation.
119. Blood circulation of the fetus.
120. Stucture of the wall of blood vessels. Structure of the arterial wall; blood supply, innervation.
121. Microcirculatory bed: types, arterioles, capillaries, venules. Arterio-venous anastomoses.
122. Structure of the venous wall and the venous valves. Blood supply and innervation.
123. Vessels of the pulmonary circulation.
124. Aorta - overview, parts and branches: ascending aorta, aortic arch, thoracic aorta, abdominal aorta.
125. External carotid artery.
126. Internal carotid artery.
127. Maxillary artery.

128. Subclavian artery.
129. Axillary and brachial artery.
130. Arteries of the forearm and hand (radial and ulnar arteries).
131. Ways of collateral blood circulation of the upper limb.
132. Branches of the thoracic aorta.
133. Branches of the abdominal aorta - upper and lower mesenteric arteries.
134. Branches of the abdominal aorta - intestinal trunk, truncus celiacus.
135. Paired branches of the abdominal aorta.
136. Common iliac artery. Internal iliac artery.
137. External iliac artery. Femoral artery.
138 Popliteal artery. Arteries of the lower leg and foot.
139. Ways of collateral blood circulation of the lower limb.
140. System of the superior vena cava - veins of the head and neck.
141. Veins of the upper limb.
142. Veins of the thoracic wall and the upper part of the abdominal wall.
143. System of inferior vena cava.
144. Veins of the pelvis and the lower part of the abdominal wall.
145. Veins of the lower limb.
146. Portal vein system.
147. Intersystem anastomoses. Cava-caval and porto-caval anastomoses.
148. Lymphatic system - overview and structural plan. Lymph vessels - structure.
149. Lymph follicles and lymph nodes - structure.
150. Lien. Topography. Microscopic structure . Blood supply, lymph outflow, innervation.
151. Thymus. Topography. Microscopic structure. Blood supply, lymph outflow, innervation.
152. Bone marrow. Microscopic structure.
153. Lymphatic vessels and regional lymph nodes of the head and neck.
154. Lymphatic vessels and regional lymph nodes of the thorax and upper limb.
155. Lymphatic vessels and regional lymph nodes of the abdomen.
156. Lymph vessels and regional lymph nodes of the pelvis and lower limb.

VI. Nervous system and sensory organs

157. Nervous system - general data. General principles of nervous system organization.
158. Basic principles of histophysiology of the nervous system.
159. Ontogenic development of the nervous system.
160. Spinal cord - macroscopic struture
161. Cytoarchitectonics of the spinal cord.
162. White matter of the spinal cord.
163. Sheaths and blood supply of the spinal cord.
164. Brain - general features, parts, embryonic development.
165. Medulla oblongata.
166. Pons.
167. Midbrain.
168. Cerebellum - lobules and nuclei.
169. Internal structure of the cerebellum: structure of the cortex.
170. White matter of the cerebellum: afferent and efferent connections of the cerebellum. Functions.
171. Midbrain.
172. Metathalamus, epithalamus, subthalamic region.
173. Hypothalamus.
174. Telencephalon: cerebrum hemispheres - grooves, folds and lobes.
175. Telencephalon - white matter.
176. Rhinencephalon.

177. Basal nuclei.
178. Limbic system.
179. Structure of the cerebral cortex.
180. Cortical fields: localization of functions in the cerebral cortex. Functional asymmetry of the cerebral hemispheres.
181. Meninges of the brain.
182. Blood supply of the brain. Blood brain barrier.
183. Lateral brain ventricules.
184. Third and fourth brain ventricules.
185. Formation and circulation of cerebrospinal fluid. Blood-CSF barrier.
186. Sensory systems - superficial mechanoreception system.
187. System of sensation for pain and temperature.
188. Deep sensory system (proprioreceptive sensory system).
189. Pathways for general sensation (superficial and deep) from the head region - trigeminal sensory system.
190. System of interoceptive sensibility.
191. Visual-sensory system.
192. Auditory-sensory system.
193. Vestibular-sensory system.
194. Taste-sensory system.
195. Olfactory-sensory system.
196. Motor system - general features. Pyramidal motor system, corticonuclear and oculomotor system.
197. Extrapyramidal system - motor system of the basal nuclei.
198. Extrapyramidal system - feedback circuits.
199. Limbic functional system.
200. Reticular formation.
201. Neuroendocrine system.
202. General arrangement of the autonomic nervous system
203. Segmental innervation of the skin and muscles. Zones of Head.
204. Spinal nerves.
205. Posterior (dorsal) branches of the spinal nerves.
206. Cervical plexus.
207. Brachial plexus - formation. Nerves of the shoulder girdle.
208. Brachial plexus - nerves of the free upper limb.
209. Anterior branches of the thoracic spinal nerves.
210. Lumbar plexus.
211. Sacral plexus.
212. Cranial nerves: overview, composition and functional analysis.
213. Nerves innervating eye muscles (III, IV and VI).
214. Trigeminal nerve (V) - general features, formation and objects of innervation.
215. N. ophthalmicus (V1).
216. N. maxillaris (V2).
217. N. mandibularis (V3).
218. Facial nerve (VII).
219. Vestibulocochlear nerve (VIII).
220. Glossopharyngeal nerve (IX).
221. Vagus nerve (X).
222. Accessory nerve (XI). Sublingual nerve (XII).
223. Sympathetic trunk – structure and parts.
224. Branches of the cervical part of the sympathetic trunk.

225. Branches of the thoracic, abdominal and pelvic parts of the sympathetic trunk.
226. Prevertebral ganglia of the sympathetic nervous system.
227. Parasympathetic nerves of spinal origin.
228. Vegetative nerve plexuses in the thoracic, abdominal and pelvic cavity.
229. Organ of vision - general features. Ontogenesis.
230. Eyeball: shape, dimensions. Outer fibrous tunic of the eyeball.
231. Vascular tunic of the eye: choroid, ciliary body.
232. Iris. Iridocorneal angle.
233. Inner tunic of the eye (retina).
234. Inner nucleus of the eyeball.
235. Auxiliary organs of the eye: muscles of the eyeball, lacrimal apparatus.
236. Blood supply of the eyeball.
237. Eyelids and conjunctiva.
238. Auditory-vestibular organ: parts. Ontogenesis.
239. External ear.
240. Middle ear: tympanic cavity. Auditory tube.
241. Tympanic membrane. Auditory ossicles.
242. Inner ear: bony labyrinth.
243. Membranous labyrinth: vestibular apparatus.
244. Organ of Corti.
245. Olfactory organ. Gustatory organ.
246. Skin. Microscopic structure. Blood supply, lymph outflow, innervation.
247. Skin glands and skin appendages. Microscopic structures.

VII. Topographic anatomy

248. Deltoid region.
249. Anterior region of arm.
250. Posterior area of the arm.
251. The elbow.
252. Anterior region of the forearm.
253. Posterior region of the forearm.
254. Wrist region.
255. Palm of the hand.
256. Dorsal part the hand.
257. Gluteal region.
258. Anterior region of thigh.
259. Posterior region of thigh.
260. Knee.
261. Anterior region of lower leg.
262. Posterior region of lower leg.
263. Heel region.
264. Dorsal part of the foot.
265. Sole of the foot.
266. Fronto-parieto-occipital region.
267. Temporal region. Mastoid region.
268. Skull base.
269. Infratemporal region.
270. Lateral region of the face.
271. Ocular region.
272. Nasal region. Paranasal sinuses. Communications.
273. Mouth region.

274. Fasciae and connective tissue spaces of the neck.
275. Anterior region of the neck.
276. Submandibular triangle.
277. Carotic triangle.
278. Sternocleidomastoid region.
279. Lateral region of the neck.
280. Subclavian region.
281. Mammary region.
282. Axillary region.
283. Thoracic wall.
284. Mediastinum.
285. Anterior abdominal wall.
286. Inguinal canal.
287. Upper part of the abdominal cavity.
288. Lower part of the abdominal cavity.
289. Retroperitoneal space.
290. Peritoneal part of the pelvis.
291. Subperitoneal part of the pelvis.
292. Topographic relations of the pelvic organs, vessels and nervous formations.
293. Subcutaneous part of the pelvis.
294. Posterior region of the neck.
295. Scapular region. Subscapular region. Lumbar region.
296. Regio vertebralis. Spinal canal and its contents.

TEXTBOOKS:

1. Drake RL, Vogl AW and Mitchell AWM. GRAY'S ANATOMY FOR STUDENTS.3rd ed., Churchill Livingstone, 2014.
2. Saladin K. HUMAN ANATOMY.4th ed. McGrow-Hill, 2014.
2. Mescher A. JUNQUEIRA'S BASIC HISTOLOGY. TEXT AND ATLAS.15th ed. McGraw- Hill, 2018.
3. Gartner LP and Hiatt JL. COLOR ATLAS AND TEXTBOOK OF HISTOLOGY.6th ed. Saunders, 2013.
4. Ross M and Pawlina W.HISTOLOGY. A TEXT AND ATLAS WITH CORRELATED CELL AND MOLECULAR BIOLOGY.7th ed. Lippincott Williams & Wilkins, 2015.
5. Tank, P. GRANT'S DISSECTOR.15th ed. Walter Kluwer -Lippincott, Williams & Wilkins, 2013.
6. Morton D, Peterson K and Albertine K. GRAY'S DISSECTION GUIDE FOR HUMAN ANATOMY.2nd ed. Churchill Livingstone, 2007.
7. Moore, K .ESSENTIAL CLINICAL ANATOMY.5th ed. Lippincott, Williams & Wilkins, 2014.
8. Hansen, J. Netter's Clinical Anatomy. 3rd ed., Saunders, 2014
9. Sadler TW. MEDICAL EMBRYOLOGY.13th ed. Lippincott, William & Wilkins, 2014.

Programme developed by:..... .....

/ Prof. Minko Minkov, MD, PhD /

....

/Prof. Ivaylo Stefanov, MD, PhD/

.....

(Chief Assis. Prof. Ruska Nenkova, PhD)

Approved by a decision of the Council of the Department of Anatomy, Histology, Embryology, Pathology, Forensic Medicine and Ethics, Protocol №17/29.10.2024

Head of Department:..... .....

(Prof. Ivaylo Stefanov, MD, PhD)

Approved by a decision of the Council of the Faculty of Medicine, Protocol №15/12.11.2024

Secretary of the Council of the Faculty of Medicine: .....

(Chief Assis. Prof. Ruska Nenkova, PhD)

UNIVERSITY "PROF. DR. ASEN ZLATAROV" - BURGAS

MEDICAL FACULTY

DEPARTMENT OF INTERNAL DISEASES, SOCIAL MEDICINE, EMERGENCY MEDICINE, PHYSIOTHERAPY AND REHABILITATION MEDICINE

Approved by!

DEAN:

/Assoc. Prof. Rumyana Yankova, PhD/

SYLLABUS

Discipline:	**SOCIAL MEDICINE**
Specialty:	**MEDICINE**
Professional field:	**7.1. Medicine**
Educational and qualification degree:	**MASTER**
Form of training:	**REGULAR**

Burgas, 2024

EXTRACTS FROM THE CURRICULUM

1. GENERAL PARAMETERS OF THE DISCIPLINE			
Total (academic hours):	210	**ECTS:**	7

Auditorium classes	**Non-auditorium classes**	**Auditorium ECTS**	**Non-auditorium ECTS**
90	120	3	4

Type of Discipline:	**Academic hours per week: /lectures + practices/**	*Course:*	*Semester:*
Mandatory	1 + 3	**I, II**	**II, III**

2. STUDY FORMS					
Auditorium classes:	**Academic hours**	**ECTS**	**Non-auditorium classes:**	**Academic hours**	**ECTS**
Lectures	30	1	**Consultation**	30	1
Practices	60	2	**Individual work** - Preparation for colloquium - Preparation of protocols - Preparing for the exam	30 30 60	1 1 2

3.EVALUATION AND CONTROL	
Forms of evaluation and control	**Relative share in the total score**
Sessional evaluation: exam	**0.4**
Semester (ongoing) assessment:	**0.6**
Forms of semester control:	
- Attendance at classes	0.25
- Ongoing testing before each practical lesson	0.125
- Active participation in classes	0.125
- Control and tests	0.25
- Defense of protocols	0.25

ANNOTATION
of the discipline "SOCIAL MEDICINE"

Purpose of the course:

Annotation: The study discipline "Social medicine and health promotion" is intended for students from the "Medicine" specialty of the Master's College of Health Sciences from the professional field "health care", a regular form of education. It is studied in the 2nd semester of the 1st year and the 3rd semester of the 2nd year

Objectives: The main objective of training in the discipline "Social Medicine and Health Promotion" is to form students' knowledge, thinking style, approaches and practical skills adequate to modern sociomedical theory and practice, to the modern public health system, as well as and health investment activities and approaches.

Teaching methods

Forms of training: lectures, exercises

Training methods:

- ecture presentation
- practical exercises
- discussions
- individual and group practical tasks
- analysis of ready statistical information
- research of scientific literature
- independent preparation of a health promotion project
- self-training

Methods of control and evaluation of results: exam

- Continuous assessment with tests and quizzes. Evaluation of self-developed questionnaire and health education project
- Final assessment through test and written exam

Tasks:

- knowledge about the essence, priorities, trends and interrelationships of social medicine, public health and health promotion in modern healthcare;
- knowledge about the modern health policy and the ongoing health reform in our country, the priorities and trends of the policy for primary medical care and health promotion;
- knowledge and skills for analysis and assessment of medical and social problems and needs of individuals, social groups and communities;
- knowledge and skills regarding modern sociomedical technologies and integral, multidisciplinary approaches to solving the medical and social problems of individuals and society;
- knowledge and skills for training the population to increase health motivation, culture and personal responsibility for health

- knowledge and skills for working in multidisciplinary medical-social teams and multicultural environment;

Prerequisites for students' basic knowledge and skills

Students should have basic knowledge in the field of public health and medicine and skills to analyze health-demographic processes.

Expected results

At the end of the training in the discipline "Social Medicine and Health Promotion", the students should have formed and acquired:

- knowledge and skills for analysis and assessment of the essence, priorities and trends of modern healthcare policy and healthcare reform, as well as the role and place of social medicine and health promotion in the healthcare system;
- to identify the socio-health phenomena of the society, the indicators of negative and positive health, the health-demographic status of the population;
- knowledge and skills for the analysis of medical-social problems and needs of individuals, social groups and communities and modern socio-medical technologies and integral approaches to their solution;
- knowledge of the essence, priorities and trends of modern health promotion policy;
- knowledge and skills for training the population in a healthy lifestyle, to increase health motivation, culture and personal responsibility for better health and quality of life.
- knowledge, skills and abilities to work in a multicultural environment and in multidisciplinary medical and social teams;
- high personal and professional motivation and readiness for full professional realization

CURRICULUM CONTENT

LECTURES

Topic	hours
SECOND SEMESTER	
Social medicine as a science - subject, tasks, modern trends, methods. Social determinants of health and disease.	2
Sociology and Medicine. Comparative characteristics of the methods of collecting individual sociological information	2
Epidemiological methods in social medicine. Definition and scope of epidemiology. Basic concepts. Measuring the frequency of diseases	2
Types of epidemiological studies. Classification. Comparative characteristics of observational studies - advantages and disadvantages, potential errors.	2
Experimental epidemiological studies. Epidemiological studies and prevention. Levels of prevention. Strategies for primary prevention. Secondary prevention. Screening.	2
Public health - definition, data sources, key indicators, determinants of public health. Social inequalities in health. Morbidity - basic concepts, sources and methods of study.	2
Socially significant diseases. Morbidity trends in the world. Measuring the global burden of disease - DALYs. Global burden of chronic non-communicable diseases – cardiovascular, cancer, diabetes, etc.	2
Global burden and trends of Infectious Diseases. Global Burden of HIV/AIDS, Tuberculosis, Malaria.	1
THIRD SEMESTER	
Demographic indicators for population statics. Approaches to estimate the age structure of the population. Medico-social aspects of population aging.	2
Medico-social aspects of birth rate and total mortality. Global, regional and national trends.	2
Medico-social aspects of child mortality and average life expectancy - basic concepts. Global, regional and national trends.	2
The health system as a social system - fundamental goals and basic functions. Assessment of health systems performance. Typology of health systems. Health service.	2
Legislative foundations of health care in Bulgaria. Health legislation - essence, functions, principles. Constitutional foundations. Types of normative acts. Health law. Law on Health Insurance.	2
Law on medical facilities. Primary health care and hospital care.	2
Global issues of reproductive health and women's health. Global problems of children's health.	2
Health promotion - essence and development of the concept of health promotion. Health education.	1
Total:	**30**

EXERCISES

Topic	hours
SECOND SEMESTER	
Social factors of health. Socio-medical approach in the activity of the doctor. Structure and content of the social history of illness.	2
Public and group health. Family health as an example of group health. Medico-social characteristics of the family. Mechanisms of impact of the family environment on health	2
Sociological methods in health care. Sources and methods of collecting primary socio-medical information. The ESI questionnaire. Questionnaire method - essence and varieties	2
Technology for collecting primary sociological information. Sociological interview - essence, varieties and requirements for conducting.	2
Technology for collecting primary sociological information. Sociological observation. Documentary method.	2
TEST ON "MEDICAL SOCIOLOGY" SECTION	
Health epidemiology. Measuring the frequency of diseases - basic concepts /risk, population at risk, exposed persons, morbidity, morbidity, cumulative morbidity./.	2
Absolute and relative comparison of disease frequency - absolute risk, etiological fraction, population attributable risk, relative risk, odds ratio.	2
Types of epidemiological studies. Observational and experimental epidemiology. Characteristics of descriptive, ecological and cross-sectional studies - essence, advantages and disadvantages. Analysis of specific examples of the three types of epidemiological studies	2
Cohort epidemiologic studies and case-control studies - nature of the setting, types, features of the conduct, advantages and disadvantages. Potential errors in epidemiological studies - systematic errors, blurring.	2
Experimental epidemiological studies - classification, characteristics, advantages and disadvantages. Analysis of specific examples.	2
TEST ON "HEALTH EPIDEMIOLOGY" SECTION. Public Health. Morbidity as a measure of public health. Dynamics and structure of morbidity in Bulgaria. Morbidity with temporary disability - study methods, main indicators for evaluation. Enduring net mining capacity.	2
Socially significant diseases - criteria and trends. Major risk factors. WHO programs for the study and prevention of socially significant diseases.	2
TEST ON "MILDENCY Morbidity" SECTION	2
Health prevention - levels and scope. Basic strategies of primary prevention. Screening - essence, characteristics of screening tests.	2
Final lesson	2

THIRD SEMESTER

Demographic approaches to the study and evaluation of public health. Demographic indicators for population statics - number, structure by gender and place of residence. Age structure - assessment approaches, age pyramid. Medico-social consequences of the demographic aging of the population.	2
Demographic indicators for population dynamics. Fertility and fertility. Specific indicators of population growth. Obligations of the doctor when registering births	2
Demographic indicators for population dynamics. Analysis and evaluation of total mortality indicators. Structure and dynamics of total mortality. Obligations of the physician when registering deaths.	2
Demographic indicators for population dynamics. Analysis and assessment of child mortality indicators. Average life expectancy. - definition of the concepts, trends of the SPC in the world and in Bulgaria.	2
TEST ON "DEMOGRAPHICS" SECTION	2
Health system - definition, fundamental goals and functions. Health service - definition, factors of development, functions and principles of construction.	2
Health legislation. Law on health in the Republic of Bulgaria.	2
Basic provisions of the Health Insurance Act.	2
Basic provisions of the Law on Medical Facilities.	2
Organization of primary care for the population. Main goals, tasks and approaches in the work of the general practitioner with priority groups of the population. Obligations of the primary outpatient care physician according to the National Framework Agreement.	2
Organization of hospital care for the population. Types of medical facilities for hospital care. Indicators for evaluating the activity of the hospital.	2
Fundamentals of temporary disability expertise. Legal obligations of the bodies of expertise. General and specific requirements for issuing sick leave.	2
Health promotion - essence. Health education - principles, methods and forms. Assignment of a task to develop health-educational programs and materials	2
TEST ON SECTION "HEALTH SYSTEM AND HEALTH LEGISLATION". Presentation of the individual projects for health education materials and programs	2
Final lesson	2
Total:	**60**

EXAM QUESTIONNAIRE

I. FUNDAMENTAL PART

1. Social medicine as a science – definition and subject, development of concepts in social medicine, methods.

2. Health and disease - development of the concepts of health, definition and dimensions of health. Social factors of individual health. Essence of socio-medical approach. Social history of the disease.

3. Empirical sociological studies. Requirements for the questionnaire in the sociological survey. Survey method - essence, varieties, advantages and disadvantages. Sociometry.

4. Interview - essence, varieties, advantages and disadvantages. Sociological observation and documentary method - essence, varieties, advantages and disadvantages.

5. Epidemiological methods in social medicine. Definition and scope of epidemiology. Basic concepts. Measuring disease incidence. Disease, morbidity, cumulative morbidity.

6. Comparing the frequency of diseases. Essence of absolute and relative comparison and types of calculated indicators.

7. Types of epidemiological studies - classification. Observational epidemiology - descriptive studies, ecological studies, cross-sectional studies.

8. Cohort studies – definition, basic requirements, types of cohort studies – design, advantages and disadvantages.

9. Case-control studies – definition, design, basic requirements, advantages and disadvantages.

10. Experimental epidemiological studies - randomized clinical trials, field trials, population intervention trials.

11. Causality in epidemiology. Bradford Hill criterion for causality. Potential errors in epidemiological studies. Blurring.

12. Epidemiological studies and their role in preventive activities. Nature and types of prevention. Premorbid prophylaxis. Primary prevention - essence and comparative characteristics of strategies for primary prevention.

13. Secondary prevention - essence. Screening - definition, types, basic requirements for successful screening, evaluation of the validity of the screening test.

14. Public health - essence and definition. Measurement and evaluation of public health - core indicators. Sources and types of data for public health assessment.

15. Determinants of public health. Dahlgren and Whitehead's social model. Social inequalities in health and models to explain social inequalities.

16. Morbidity as a measure of public health - meaning, conditions, sources and methods of studying morbidity. Basic concepts in the study of morbidity. International Classification of Diseases /ICD/ - 10th revision.

17. Morbidity trends in the world. Socially significant diseases. Measuring the Global Burden of Disease - DALYs. Studies on the global burden of disease.

18. Global burden and trends of chronic non-communicable diseases (NCDs) and injuries - global health relevance, risk factors, WHO strategies to respond to NCDs.

19. Global Burden and Trends of Infectious Diseases - Relevance to Global Health. Global burden and trends of some infectious diseases - HIV/AIDS, tuberculosis, malaria.

20. Demographic processes and indicators. Demographic cycle. Indicators of population statics. Approaches to estimate the age structure of the population. Medico-social aspects of population aging.

21. Medico-social aspects of fertility - definition of the main concepts, evaluation scale. Population reproduction rates. Birth rate trends in the world and in Bulgaria.

22. Medico-social aspects of general mortality - definition of basic concepts, assessment scale, nature of standardized mortality indicators. Trends in total mortality in the world and in Bulgaria.

23. Medico-social problems of child mortality - definition of the main concepts, rating scale. Mortality up to 5 years of age. Trends in child mortality and under-5 mortality in the world and in Bulgaria.

24. Medico-social problems of the average life expectancy - definition of the main concepts. Trends of STDs in the world and in Bulgaria.

II. ORGANIZATIONAL-APPLICATION PART

25. International health cooperation. World Health Organization - purpose, principles, main tasks, structure. Other specialized organizations of the United Nations. Millennium Development Goals. United Nations Sustainable Development Goals (2015-2030).

26. WHO Global Strategy "Health for All" - essence and development. Strategy of the WHO European Region "Health for all in the 21st century". European Health 2020 policy framework. National Health Strategy 2020.

27. The health system as a social system - definition, fundamental goals and basic functions, evolution of health systems.

28. Health service - definition, characteristics and levels of health care. Factors, functions and organizational principles of the health service.

29. Health policy, health strategy and health management - definition of concepts, levels of health policy and health authorities. Priorities of health policy in developed countries.

30. Typology of health systems. Criteria and comparative characteristics of the health system models in developed countries.

31. Main guidelines of the health reform in Bulgaria - need for reform, goals and principles. Characteristic of the reform in medical activity.

32. General characteristics of health legislation in Bulgaria - Essence, functions and principles of health legislation. Legislative initiative and types of normative acts.

33. Basic provisions of the Health Act.

34. Basic provisions of the Health Insurance Act.

35. Basic provisions of the Law on Medical Institutions.

36. Primary health care - the WHO concept and the experience of developed countries. Primary health care in Bulgaria.

37. Hospital care. Hospital care needs. Types of hospital facilities, structure and functions of the hospital. Indicators for evaluating the activity of the hospital.

38. Global issues of reproductive health and women's health. The problem of maternal mortality. Organization of outpatient and hospital obstetrics and gynecology in Bulgaria.

39. Global problems of children's health. Organization of pediatric care in Bulgaria.

40. Medico-social problems of the elderly. Organization of health care for the elderly.

41. Basic provisions of the medical examination of working capacity. Basic concepts. Normative regulation and bodies of the expertise of working capacity - rights and obligations.

42. Basic and specific rules for issuing sick leaves for temporary incapacity for work.

43. Origin and evolution of the concept of health promotion. The contribution of the Ottawa Charter to the formulation of the basic principles of health promotion.

44. Health education - essence, main goals and principles, models and approaches, classic and modern methods of health education.

LITERATURE FOR PREPARATION

I. PRIMARY:

1. Lecture course in electronic form on Social Medicine – Professor Vladimir Gonchev, MD, PhD

2. Grancharova G., S. Aleksandrova-Yankulovska. Social medicine. Sixth revised and supplemented edition. ISBN 978-954-756-216-5. Publishing center of MU-Pleven, 2017, 2018, 326 pages.

3. Grancharova G., S. Aleksandrova-Yankulovska. Social medicine. Fifth revised and enlarged edition, ISBN 978-954-756-167-0. Publishing Center of MU-Pleven, 2018, 326 pages

4. R Bonita R Beaglehole T Kjellström Basic epidemiology WHO 2006

5. Rumen Stefanov Social medicine: training approaches and models, Plovdiv 2011

6. Health Law. Bulgarian legal portal - www.lex.bg

7. Health Insurance Law. Bulgarian legal portal - www.lex.bg

8. Law on medical institutions. Bulgarian legal portal - www.lex.bg

II. ADDITIONAL:

7. National Center for Public Health and Analysis. Brief statistical guide "Health" 2019. Available at: http://ncphp.government.bg

8. National Statistical Institute. Healthcare 2019. Available at http://nsi.bg/bg

9. Ministry of Health - www.mh.government.bg

10. National Health Insurance Fund - www.nhif.bg

11. World Health Organization. Health topics. http://www.who.int/topics/en/

Compiled the curriculum:

.....

(Professor Vladimir Gonchev, MD, PhD)

The curriculum was discussed and adopted at a meeting of the Department of Internal Medicine, Social Medicine, Disaster Medicine, Phisoterapy No. ..... of ..... d.

Head of Department: ..

(Professor Dr. Vladimir Gonchev)

The curriculum was adopted and discussed at the Faculty Council of the Faculty of Medicine, Protocol No. 36 from 15.02.2024г.

Faculty Secretary: ....

(Assistant Ruska Nenkova)

UNIVERSITY "PROF. DR. ASSEN ZLATAROV" - BURGAS

MEDICAL FACULTY

DEPARTMENT OF NEUROLOGICAL DISEASES, PSYCHIATRY AND PSYCHOLOGY

APPROVED BY THE DEAN

....

/Assoc. Prof. R. Yankova-Avramova, PhD/

Медицински факултет Редовно обучение

SYLLABUS

Academic discipline: **MEDICAL PSYCHOLOGY**

Specialty: **7.1. MEDICINE**

Field of higher education: **7. HEALTH CARE AND SPORTS**

Education and qualification degree: **MASTER**

Form of education: **FULL-TIME**

Burgas
2024

1. GENERAL PARAMETERS OF DISCIPLINE

General educational employment (hours):	60	Credits:	2

Auditorial	Extracurricula	Auditorial	Extracurricula
30	30	1,00	1,00

Type of subject:	Number of hours per week: /lectures + seminars+practicals/	Course:	Semester:
Задължителна	1+1	II	III

2. EDUCATIONAL FORMS

Auditorial:	Hours	Credits	Extracurricula:	Hours	Credits
Lectures	15	0,50	Consultations (work with a teacher)	10	0,3
Seminars	15	0,50			
Practicals	-	-	Self-study - Referencing a scientific text - Course project	10 10	0,3 0,4

3.ASSESSMENT AND CONTROL

Assessment and control forms	Relative proportion in the total assessment
Sessional Assessment: Exam	**0.4**
Current assessment:	**0.6**
Forms of semester control:	
- Attendance and active participation in classes	0,2
- Preparation of an abstract of a scientific text	0,2
- Course project	0,2

ANNOTATION

The academic discipline "Medical psychology" is obligatory for the students of the specialty "Medicine", second year, EQD "Master", full-time form of education.

Aims and objectives

The course focuses, based on biopsychosocial paradigm, on the interaction of psychological, physical and social factors with an individual's health and illness.

Basic aims of the discipline are to acquire knowledge about the main principles of medical psychology, the concepts of illness and patient, stress and anxiety, and how the psyche influence the onset, the course and the treatment of the illness, as well as the psychosomatic problems and the health related behavior.

Students will learn more about:

- The specifics of human psyche in health and illness, as well as the relevant psychological concepts and models;
- The psychological factors affecting physical disorders;
- The effects of traumatic stress and types of coping mechanisms;
- A holistic approach to patient care;
- The doctor-patient relationship and the effective communication within therapeutic-like context.

Structure of the learning content

The course is structured in ten basic topics related to general and medical psychology.

Teaching methods

In the learning process, a central place is given to lectures and seminars as the main organizational forms, in which a variety of learning methods are offered (presentations, discussions and debates, case work).

Significant attention is also given to working in small groups, case studies and role-plays, project work and research tasks are offered within the seminars.

Forms of self-study

Working with information sources (specialized literature, electronic resources, Internet sources), referencing scientific text, development of a course project.

Forms of assessment

The course finishes with a written exam (test). The evaluation is formed by three components: current evaluation of the work in the classes, referencing of the text and presentation of the course project; assessment from a written exam (test).

Prerequisites for students' basic knowledge and skills

The discipline is basic and there are no requirements for the students' prior preparation.

Expected results

The expected learning outcomes are aimed at students acquiring basic knowledge in the field of medical psychology. Students are expected to form practical knowledge and skills for assessing the patient's needs, building an individual care plan based on effective communication, forming trusting relationships and interactions, which knowledge and skills can competently apply in their future professional practice.

CONTENT OF THE SYLLABUS

A. Lectures

Topic:	Hours:
1. Introduction to Medical psychology History and contemporary development of medical psychology Subject and tasks of medical psychology.	1 h
2. Psychological approaches in medical practice part 1 Research methods and approaches in psychology applicable in medical practice.	1 h
3. Structure of human psyche Psychological characteristics, processes and states. Temperament and character.	1 h
4. Behaviour, needs, motivation Needs and motivation. Extrinsic and intrinsic motivation. Emotions and emotional regulation of behavior.	1 h
5. Personality. Factors and models of personality development. Personality. Factors. Theories and concepts (psychoanalysis, behavioral, cognitive and humanist approach).	2 h
6. Health and Illness. Attitudes towards health and disease. Illness Behavior Health Belief Model. Attitudes, beliefs and coping strategies. Psychological defense mechanisms.	2 h
7. Psychosomatics Theoretical foundations of psychosomatic medicine. Psychosomatic disorders: cardiovascular, gastrointestinal, respiratory and, musculoskeletal system disorders, migraine, oncological, endocrine and skin disorders.	2 h
8. Crisis and crisis intervention Social adjustment and maladaptation. Frustration, deprivation, conflict and crisis states.	2 h
9. Psychology of stress, anxiety and coping Protection from stressful situations. Coping strategies. Strategies for coping with stress in medical practice. Burn out syndrome.	2 h

10. Communication in medical practice.	1 h
First impression. Building a strong doctor - patient relationship.	
Breaking bad news to patients and relatives.	
Total: 15 hours	
B. SEMINARS	
Topic:	**Hours:**
1. Human psyche, behaviour, needs and motivation	
Psyche – systems.	2 h
Temperament and character.	
Needs, motivation, behavior	
2. Personality. Factors and models of personality development.	2 h
Theories and concepts.	
3. Health and Illness. Attitudes towards health and disease. Illness behavior	2 h
Health Belief Model	
Illness behavior	
4. Psychosomatic medicine	
Definitions.	2 h
Classification and diagnosis	
5. Importance of communication in medical practice	2 h
First impression.	
Building trust in the doctor - patient relationship.	
Barriers to effective communication.	
6. Medical examination and first interview	
Approaches to medical examination.	2 h
Clinical interview - steps and phases in progress.	
Interviewing techniques.	
Patient defensive behaviors.	
7. Crisis and crisis intervention. Traumatic stress reactions	2 h
Stress management in a critical situation.	
	1 h

8. A psychotherapeutic approach in medical setting.	
Psychotherapy in somatic medicine.	
Total: 15 hours	

COURSE PROJECT

A list of individual assignments related to the lectures is offered, which are prepared and presented within the semester.

CONSPECTUS

1. Subject and tasks of medical psychology
2. Psychological diagnostic. Research methods and approaches in psychology
3. Structure of human psyche. Psychological characteristics, processes and states
4. Temperament and character
5. Behavior, needs and motivation
6. Emotions and emotional regulation of behavior
7. Personality. Theories of personality
8. Health and Illness. Attitudes towards health and disease. Illness behavior
9. Psychosomatic disorders. Classification and diagnosis
10. Psychological factors in somatic diseases. Psychological issues in chronically ill and terminally ill people
11. Crisis and crisis intervention. Social adjustment and maladaptation. Frustration, deprivation, conflict and crisis states
12. Psychology of stress, anxiety and coping. Coping strategies. Strategies for coping with stress in medical practice and burn out syndrome
13. Communication in medical practice. Breaking bad news to patients and relatives
14. Clinical interview - steps and phases in progress. Interviewing techniques
15. Psychotherapeutic approach in doctor – patient relationship

LITERATURE FOR SELF-STUDY

Mandatory

1. Akabaliev, V, & D. Stoyanov (Ed.) (2016). Medical psychology. 2nd ed., Lax book
2. Ayers, S., R. de Visser. (2021). Psychology for medicine and healthcare. 3d ed., SAGE Publications Ltd
3. Balint, M. (2000). The doctor, his patient and the illness. 2nd ed, Churchill Livingstone
4. Fernald, D. (2008). Psychology: six perspectives. SAGE Publications Inc.
5. Lloyd, M. et all. (2018). Clinical communication skills for medicine. Elsevier.

Recommended

1. Kadosh, Sh., A. Ben-shahar. (2019). Incorporating psychotherapeutic concepts and interventions within medicine with the heart in mind. Routledge
2. Kübler-Ross, E., & D. Kessler. (2014). On grief and grieving: Finding the meaning of grief through the five stages of loss. Scribner; Reprint edition
3. Lazarus, R., S. Folkman. (1984). Stress, appraisal and coping. Springer Publishing Company
4. Lazarus, R. (2006). Stress and emotion. Springer Publishing Company
5. Levenson, J. L. (Ed.). (2007). Essentials of psychosomatic medicine. American Psychiatric Publishing, Inc.
6. Roberts, A. (Ed). (2000). Crisis intervention handbook: Assessment, treatment, and research. Oxford University Press
7. Silverman, J. (2019). Medical Interviewing. In: Llewellyn C, Ayers S, McManus C, et al., eds. Cambridge Handbook of Psychology, Health and Medicine. Cambridge University Press, pp. 387-394.

Authors: .....
(Prof. Dr. G. Panov, MD, PhD, DSs)

....
(Assoc. Prof. B. Tsonkova, PhD)

The curriculum was discussed and adopted at a meeting of the Department of "Nervous Diseases, Psychiatry and Psychology", protocol No. ... of 04.09.2024

Head of Department: .....
(Prof. Dr. G. Panov, MD, PhD, DSs)

The curriculum was adopted and discussed at the Faculty Council of the Faculty of Medicine, protocol No. 12 from 10.09.2024.

Scientific Secretary of the Faculty of Medicine: .....
(Ch. Ass. Prof. R. Nedkova)

UNIVERSITY "PROF. Dr. ASEN ZLATAROV" - BURGAS
FACULTY OF MEDICINE
DEPARTMENT OF "INTERNAL DISEASES, SOCIAL MEDICINE, EMERGENCY MEDICINE, PHYSIOTHERAPY AND REHABILITATION"

Approved by:
DEAN:
/Assoc. Prof. Rumyana Yankova, PhD/

SYLLABUS

Study discipline:	**BIOSTATISTICS**
Specialty:	**MEDICINE**
Professional direction:	**7.1. MEDICINE**
Educational and qualification degree:	**MASTER**
Form of education:	**REGULAR**

BURGAS 2024

SAMPLES FROM THE CURRICULUM

1. GENERAL PARAMETERS OF THE DISCIPLINE			
Total (academic hours):	60	**ECTS:**	2
Auditorium classes	**Non-auditorium classes**	**Auditorium ECTS**	**Non-auditorium ECTS**
30	30	1	1
Type of Discipline:	**Academic hours per week: /lectures + practic-es/**	*Course:*	*Semester:*
MANDATORY	1+1	**II**	**III**

2. STUDY FORMS					
Auditorium classes:	**Academic hours**	**ECTS**	**Non-auditorium classes:**	**Hours**	**Credits:**
Lectures	15	0.5	Consultations (work with a teacher)	10	0.3
Seminar classes	15	0.5	Independent work	20	0.7
Practical classes	—	—			

3. EVALUATION AND CONTROL	
ASSESSMENT AND CONTROL FORMS	**Relative share in the total assessment**
Sessional evaluation: exam	**0.4**
Semester (ongoing) assessment:	**0.6**
Forms of semester control:	
- Attendance at classes	0.25
- Ongoing testing before each practical lesson	0.125
- Active participation in classes	0.125
- Control and tests	0.25
- Defense of protocols	0.25

ANNOTATION
of the discipline "BIOSTATISTICS"

Purpose of the study discipline:

The study discipline "BIOSTATISTICS" is intended for the students of the specialty "MEDICINE", OCS "MASTER'S", regular form of study.

The aim of the study discipline "BIOSTATISTICS" is for students to acquire a mandatory minimum of knowledge about the essence, principles and logic of statistical analysis, about the cognitive and specific requirements for the use of basic statistical methods in biology, medicine and health care. To form skills for computer application of the most important statistical methods.

Structure of the learning content: In the teaching of the discipline, lectures, exercises and tasks are set for independent work.

Teaching methods and means: Teaching methods are a way of working for the university teacher and the student, with the help of which mastery of knowledge, skills and habits is achieved, the students' worldview is formed and their abilities are developed. Training in the discipline "BIOSTATISTICS" is conducted by combining traditional methods, multimedia presentations and developed methodologies.

Forms of study: The study of the discipline takes place in the following forms:

1. Lectures in which the basic theoretical knowledge is given on the topics under consideration. For some of the topics and subtopics that can be studied independently by the students, the lectures are introductory. They reveal the essence of the questions falling within the scope of the topics and direct independent work on the recommended literature. In parallel with the lecture material, there will also be discussions on theoretical issues, solving tasks related to the practical application of the methods under consideration, solving didactic tests and case studies, etc.
2. Consultations to clarify basic concepts, statistical characteristics, etc. and targeting their specific features, with a view to overcoming difficulties in independent work, etc.
3. The independent work of the students is organized through consultations in the teachers' reception hours, through e-mail communication, joint work on scientific and professional tasks, covering current tests on a given topic by the teacher conducting the exercises, etc.

Assessment methods: The course ends with an exam. During each exercise, tasks related to the topic are set. At the end of the semester, a grade is formed from each student's participation in the exercises based on the assigned case studies for each exercise, tasks for independent work, attendance at classes, as well as the active participation in the exercises, which has a coefficient of 0.3 in the overall grade. The main share in the overall grade is given by the grades from the two control tests during the semester.

Expected results

After successful completion of the course in the discipline, students should know and be able to:

To acquire knowledge about the subject and importance of medical statistics, types of statistical analyses, theoretical and practical skills in working with the various methods and products of statistical analysis.

CONTENTS OF THE CURRICULUM
THEMATIC PLAN OF LECTURES

BIOSTATISTICS

	Hours
1. The role of statistics in medicine and healthcare. Definition of medical statistics as a scientific discipline. Use of statistics in medicine and healthcare. Use of statistical concepts and methods in medical practice	1
2. Planning of scientific studies. Population and sample. Types of scientific research. Stages of scientific studie	1
3. Health data – sources, levels and quality of measurementSources and procedures for collecting data on health and the activity of the health service. Types of variables. Measuring scales	1
4. Representative surveys Nature of representative surveys. Basic concepts and principles of sample selection. Types of samples. Systematic errors in representative surveys. Group properties of statistical populations	1
5. Organization and presentation of data from scientific studies Tabular presentation of data. Frequency distributions. Graphical presentation of tabular data and frequency distributions	1
6. Description of qualitative variables Proportions (extensive indicators). Frequency indicators (intensive indicators). Errors in the interpretation of extensive and intensive indicators. Nature of standardized indicators	1
7. Description of quantitative variables. A measure of central tendency. Two basic properties of quantitative variables. A measure of central tendency. Arithmetic mean value. Median. Fashion. Comparison of arithmetic mean, median and mode. Other positional averages – percentiles and quartiles	1
8. Description of quantitative variables. Measuring variation.Measures of variability (dispersion). Span (range, extent, limit) of the variation order. Interquartile range. Standard deviation and variance. Coefficient of variation. Variation trends. Normal distribution	1
9. Creation of norms in medicine Essence of regulations. Martin's method of creating norms. Method of percentiles for creating norms	1

10. Probability and probability distributions 1

Basic concepts. Probability measurement and types of probability. Basic rules for measuring probability. Probability distributions.

11. Statistical estimation: from sample to population 1

Need to study samples. Nature of statistical evaluation. Basic concepts in statistical evaluation. Standard (stochastic mean) error. Warranty probability (reliability). Guarantee (trust) coefficient. Maximum (stochastic) error. Confidence interval (confidence limits). Practical steps in static evaluation. Estimation of averages. Estimation of coefficients and proportions. Determining the minimum sample size for estimating parameters in a population. Determining the sample size for quantitative variables. Determining the sample size for qualitative variables

12. Statistical testing of hypotheses 1

Meaning and nature of comparing data from samples. Basic concepts in hypothesis testing. Nature and types of statistical hypotheses. Errors of the 1st and 2nd generation. Statistical significance of hypotheses. Statistical tests for testing hypotheses. Basic principles and procedures for hypothesis testing. Basic principles in hypothesis testing. Basic steps of the hypothesis testing procedure. Selection of statistical tests of significance. Parametric methods of hypothesis testing. Comparing two groups of observations by t-test. Comparing more than 2 groups by analysis of variance. Nonparametric methods of hypothesis testing. Nature of non-parametric criteria. Chi-square criteria. Other non-parametric criteria. Interpreting statistical tests

2

13. Methods for studying causal dependencies

Basic concepts of correlation analysis. Functional and correlation dependence. Types of correlation dependencies. Correlation coefficient - essence and evaluation. Scatter diagram. Methods for calculating correlation coefficients. Correlation coefficient for qualitative variables. Spearman's rank correlation coefficient. Pearson correlation coefficient for quantitative variables. Coefficient of determination. Regression analysis

14. Analysis of dynamic changes 1

Significance of the study of trends in the development of health and social phenomena. Dynamic queues - characteristic and basic elements. Descriptive indicators of dynamics. Analytical indicators of dynamics

Total: 15 h

THEMATIC PLAN OF EXERCISES **Hours**

BIOSTATISTICS

1. Representative studies. Organization and presentation of research data. Frequency **2**

distributions

2. Structure, functions and operation of a statistical application. Analysis of empirical (frequency) distributions. Tabular and graphical representation of the data - polygon and histogram	**2**
3. Description of quantitative variables - mean, median, mode, variance, standard deviation, coefficients of variation, skewness, and kurtosis. A measure of central tendency. Using the Descriptive Statistics procedure from the Data analysis module	**2**
4. Creation of norms in medicine. Interval statistical estimation - standard error, maximum error and confidence interval of arithmetic mean	**2**
5. Statistical testing of hypotheses of difference between two samples (dependent and independent). Comparison of variances of two samples Fisher's F-test. Using the t-test for independent samples and t-test for dependent samples procedures from the Data analysis module to determine significance of the difference between means.	**2**
6. Methods for studying causal dependencies. Calculating a Pearson correlation coefficient to determine a linear relationship between two variables by using the Correlations procedure from the module. Data analysis. Construction of a two-dimensional scatter diagram (Scatter Plot).	**2**
7. Methods for studying causal dependencies. Linear regression. Multiple linear regression. Using the Multiple Regression module to examine the linear relationship between variables. Defining the linear regression model – defining the dependent and independent variables. Interpretation of the results of the regression analysis - coefficient of multiple correlation (Multiple R), coefficient of multiple determination (R-square), standard error of the estimate (Standard Error of the estimate). Obtaining the regression coefficients, their standard errors, determining their statistical significance. Obtaining graphs. Finding predicted values of the dependent variable.	**2**
8. Control work	**1**
Total:	**15 h**

EXAM QUESTIONNAIRE

1. The role of statistics in medicine and healthcare. Planning scientific studies.
2. Health data – sources, levels and quality of measurement.
3. Representative studies.
4. Organization and presentation of research data.
5. Description of qualitative variables.
6. Description of quantitative variables. A measure of central tendency.
7. Description of quantitative variables. Measuring variation.
8. Creation of norms in medicine.
9. Probability and probability distributions.
10. Statistical evaluation: from sample to population.
11. Statistical testing of hypotheses.
12. Basic concepts in data comparison and hypothesis testing.
13. Parametric methods for testing hypotheses.
14. Non-parametric methods for testing hypotheses.
15. Methods for studying causal dependencies.
16. Correlation analysis.

17. Regression analysis.
18. Analysis of dynamic changes.

LITERATURE FOR PREPARATION

Mandatory

1. Electronic lecture course on "Medical Statistics"
2. Gena Grancharova, Petkana Hristova, Medical Statistics, 2011, Publishing Center of MU - Pleven
3. N. Tsacheva, K. Lyubomirova, M. Stoycheva, T. Kundurdzhiev, E. Naseva, Statistics in occupational medicine and public health, Sofia, 2015
4. Dokova, Kl., Mirvheva, I., Biostatistics, Lecture course&Practical seminars for Medical students, Medical university of Varna 2011

Recommended

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2. G. Ranchov, Medical statistics. Sofia, Gorex Press 1997, 274

Compiled the curriculum:

1……
Prof. Dr. Vladimir Gonchev)

2……
(Assoc. Prof. Dr. Velichka Traneva)

The curriculum was discussed and adopted at a meeting of the Department of "Internal Diseases, Social Medicine, Disaster Medicine, Physiotherapy and Rehabilitation", Protocol No. 7 of 12.09.2024

Head of department
(Prof. Dr. Vladimir Gonchev)

The curriculum was adopted and discussed at the Faculty Council of the Faculty of Medicine, Protocol No. 11 from 20.09.2024.

FS Secretary: .....
(Assistant Prof Ruska Nenkova)