MINISTRY OF HEALTH OF THE REPUBLIC OF BELARUS
Educational Institution
BELARUSIAN STATE MEDICAL UNIVERSITY

APPROVED
by First Vice-Rector, Professor
I.N.Moroz
03.08.2022
Reg.# UD-L749/2223 /edu.

TOPOGRAPHIC ANATOMY AND OPERATIVE SURGERY

Curriculum of higher educational institution in the academic discipline for the specialty:

1-79 01 07 «Dentistry»

2022

Curriculum is based on the educational program «Topographic Anatomy and Operative Surgery» in the specialty 1-79 01 07 «Dentistry», approved 02.08.2022, registration # УД-L.749/2223/уч; on the educational plan in the specialty 1-79 01 07 «Dentistry», approved 18.05.2022, registration # L 79-1-7/2223/mf.

COMPILERS:

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RECOMMENDED FOR APPROVAL:

by the Department of Human Morphology of the educational institution «Belarusian State Medical University»
(protocol # 13 of 10.06.2022);

by the Scientific and Methodological Council of the educational institution «Belarusian State Medical University»
(protocol # 6 of 29.06.2022)

EXPLANATORY NOTE

«Topographic Anatomy and Operative Surgery» – the academic discipline of the Morphological Module, which contains systematized scientific knowledge about the layered structure of human body regions, organs topography, methods and rules of surgical operation.

The aim of the discipline «Topographic Anatomy and Operative Surgery» is the formation of general and basic professional competencies for acquisition by students of scientific knowledge about the layered structure of the head and neck regions, mastering certain surgical skills and familiarity with the main surgical interventions on the head and neck, performed according to vital indication.

The objectives of the discipline «Topographic Anatomy and Operative Surgery» are to form students' scientific knowledge about:

stratified structure of the head and neck regions and their constituent anatomical structures in relation to their nerve and blood supply;

technique for performing general surgical interventions on the head and neck;

skills and abilities required for:

explaining the clinical symptoms of diseases localized in the head and neck regions, choosing rational methods for their surgical treatment;

use of the surgical instruments of general purpose.

The knowledge, skills, and abilities acquired during the study of the academic discipline «Topographic Anatomy and Operative Surgery» are necessary for successful mastering of the following modules: «Oral and Maxillofacial Surgery», «Propaedeutic Dentistry and Materials Science».

Studying the educational discipline «Topographic Anatomy and Operative Surgery» should ensure the formation of students' basic professional competencies.

BPC. Identify the main anatomical structures (vessels, nerves, muscles and bones) in the head and neck; use general surgical instruments when putting various types of surgical sutures.

As a result of studying the discipline «Topographic Anatomy and Operative Surgery» the student should

know:

layered structure of the topographic regions of the head and neck;

features of blood supply, regional lymph drainage and innervation of the anatomical structures of the head and neck;

synotopy and holotopy of the organs of the head and neck;

purpose and rules for using surgical instruments;

types of local anesthesia used in dental practice;

be able to:

choose the optimal method of treatment of diseases localized in the head and neck;

use general surgical instruments;

apply and remove skin sutures, perform surgical knots.

master:

methods of dissection, separation and connection of tissues using appropriate surgical instruments;

skills in performing tracheostomy, primary surgical treatment of head and neck wounds, drainage phlegmon and abscesses.

Total number of hours for the study of the discipline is 108 academic hours. Classroom hours according to the types of studies: lectures - 6 hours (including 2 hours of supervised student independent work), practical classes - 51 hours, student independent work (self-study) - 51 hours.

Intermediate assessment is carried out according to the syllabus of the specialty in the form of a credit (3 semester).

Form of higher education – full-time.

ALLOCATION OF ACADEMIC TIME ACCORDING TO SEMESTERS OF STUDY

Code, name of the specialty	semester	Number of academic hours						Form of intermediate assessment
		total	in-class	including			out-of-class self-studies	
				lectures (including supervised independent work)	supervised student independent work	practical classes		
1-79 01 07 «Dentistry»	3	108	57	6	2	51	51	credit

THEMATIC PLAN

Section (topic) name	Number of class hours	
	lectures	practical
1. Topographic anatomy of the neck	**-**	**16**
1.1. Superficial anatomy of the neck. Fascia and spaces of the neck	-	4
1.2. Anterior neck region	-	4
1.3. Sternocleidomastoid region of the neck	-	4
1.4. Lateral region of the neck	-	4
2. Topographic anatomy of the head	**4**	**23**
2.1. Superficial anatomy of the head. Anterior section of the facial region of the head	2	11
2.2. Lateral region of the facial part of the head	2	4
2.3. Neurocranium	-	8
3. Operative surgery	**2**	**12**
3.1. General issues of operative surgery	-	4
3.2. Operational techniques performed on the neck	1	4
3.3. Operational techniques performed on the head	1	4
Total hours	**6**	**51**

CONTENT OF THE EDUCATIONAL MATERIAL

1. Topographic anatomy of the neck

1.1. Superficial anatomy of the neck. Fascia and spaces of the neck

Borders of the neck, division into regions and projection of the main anatomical structures. Anterior, sternocleidomastoid and posterior regions of the neck. The main bone and cartilage landmarks: hyoid bone, jugular notch of the sternum, thyroid, cricoid cartilages, tracheal rings. Projection on the skin of the subclavian, external carotid arteries; internal, external and anterior jugular vein; branches of the cervical and the brachial plexus. Places of finger pressing of arteries. Projection of the superficial lymph nodes of the neck.

Fascia of the neck: classification of the fascia of the neck according to V.N.Shevkunenko and according to the International anatomical terminology. Interfascial spaces of the neck: closed, open. The clinical significance of the fasciae of the neck: connection with the spaces of the head, mediastinum, axillary and supraspinous fossae.

1.2. Anterior neck region

Suprahyoid region: borders, layered structure of the submandibular and submental triangles. Submandibular gland: topography, fascial sac of the submandibular gland, topography of the submandibular duct. Muscles of the floor of the mouth: innervation and

blood supply. Intermuscular fissures of the floor of the mouth. Sublingual space: borders, contents.

Infrahyoid region: borders, triangles. Carotid triangle: layered structure. Structural components of the main neurovascular bundle of the neck. Place of palpation and digital pressure of the common carotid artery to temporarily hemostasis. Omotracheal triangle: layered structure. Topography of the neck organs: larynx, cervical part of the trachea, thyroid and parathyroid glands, pharynx, cervical part of the esophagus.

1.3. Sternocleidomastoid region of the neck

Borders of the sternocleidomastoid region, layered structure. Topography of the skin branches of the cervical plexus, external jugular vein. Carotid sheath and elements of the main neurovascular bundle of the neck; its relations in the upper, middle and lower thirds of the sternocleidomastoid region. Deep lateral lymph nodes of the neck. Topography of the branches of the cervical ganglions of the sympathetic trunk. Prescalene space: boundaries, content. Topography of the phrenic and vagus nerves.

Scalenevertebral triangle: borders, content. Subclavian artery: divisions, topography of branches. Place of digital pressing of the subclavian artery. Jugular venous angle: sources of formation, relationships with other neurovascular structures. Thoracic and right lymphatic ducts: topography, sources of formation.

1.4. Lateral region of the neck

Borders and layered structure of the omoclavicular and omotrapezoid triangles. Fascia, spaces and its contents. Interscalene space: boundaries, contents (subclavian artery, brachial plexus). Supraclavicular lymph nodes.

2. Topographic anatomy of the head

2.1. Superficial anatomy of the head. Anterior section of the facial region of the head

The border of the head and neck, the division of the head into the facial and neurocranium sections. Head regions and projection of the main anatomical structures. The main bone landmarks: supraorbital and infraorbital edges, zygomatic arch, mastoid process, supraorbital notch, infraorbital and mental foramen. Projection on the skin of the facial, superficial temporal and occipital arteries, branches of the facial nerve. Blood supply and innervation of the scalp. Places of localization of target points for performing block anesthesia.

Oral region. Rima oris and lips. The layered structure of the lips and the characteristics of the layers: skin, muscles, submucosa, mucous membrane. Sources of blood supply and innervation of the upper and lower lips. The boundaries of the vestibule of the oral cavity, the upper and lower arches, the frenulum of the upper and lower lips, the topography of the parotid duct. Oral cavity proper. Age and individual features of the structure of the maxilla and mandibula. Trajectories and buttresses.

Teeth. Layered structure of the hard and soft palate. The relief of the mucous membrane of the floor of the oral cavity, the topography of the submandibular sublingual ducts. Tongue. Sources of blood supply and innervation, lymph drainage from the walls and organs of the oral cavity proper.

Orbit: bones, canals, fissures, foramina, fossas, contents. Muscles of the eyeball, sources of innervation. Ophthalmic artery, superior and inferior ophthalmic veins. Ciliary ganglion, topography, branches, area of innervation. Eyeball: inner tunics of the eyeball. Fascial sheath of eyeball. Orbit fat body, connections with the spaces of the face. Layered structure of the eyeball. Lacrimal gland, tracts of the outflow of tears.

Nasal region, borders. External nose, layered structure, innervation and blood supply of the skin of the nose. Nasal cavity: bones, conchas and nasal meatuses. Connection nasal cavity with the paranasal sinuses and the orbital cavity. Blood supply and innervation of the nasal mucosa. Topography of the paranasal sinuses, blood supply and innervation of the mucous membrane. The ratio of the roots of the upper molars with the maxillary sinus.

2.2. Lateral region of the facial part of the head

Buccal region: borders, layered structure and characteristics of anatomical structures: greater and lesser zygomatic muscles, risorius muscles, levator anguli oris muscle. The course of the branches of the facial artery. Facial vein: tributaries, anastomoses. Buccal fat pad. Buccinator. Spaces: buccal and canine fossa; its communications with other spaces of the head.

Parotidomasticatory: borders, layered structure. Projection on the skin of the parotid gland and its excretory duct. The bed and the parotid gland space, its connection with the lateral parapharyngeal space. Topography of vessels and nerves lying in the thickness of the gland. Masseter, blood supply and innervation. Layered structure of the area in the projection of the masseter muscle.

Deep lateral region of the face. Borders, bone walls of the infratemporal and pterygopalatine fossa. Contents: lateral and medial pterygoid muscles, tendon of temporal muscle, maxillary artery, pterygoid plexus, mandibular nerve. Temporopterygoid and pterygomandibular spaces:contents. Borders of the parapharyngeal space, division into departments: retropharyngeal and lateral pharyngeal spaces. The relationship of spaces of the deep lateral region spaces with other spaces.

2.3. Neurocranium

Fronto-parietal-occipital region: borders, layered structure. Localization of spaces. The occipitofrontalis muscle. Features of the structure and development of the bones of the cranial vault. Sources of blood supply and innervation of the anatomical structures of the fronto-parieto-occipital region.

Temporal region and mastoid region: borders, layered topography; spaces and its connection with the spaces of neighboring regions. Shipo's trepanation triangle. Projection on the region of the mastoid process of the facial nerve canal, sigmoid sinus, mastoid antrum.

Internal base of the skull: topography of the anterior, middle and posterior cranial fossae. Dura mater, pia mater, arachnoid, sinuses; subarachnoid space, ventricles of the brain, cisterns. Pathways of circulation of cerebrospinal fluid. Blood supply to the brain.

3. Operative surgery

3.1. General issues of operative surgery

Stages of surgical intervention. Types of surgical operations. Primary and secondary treatment of a surgical wound. Delimitation of the surgical field and isolation of the edges of the surgical wound. Surgical instruments and rules for their use; special instruments used in operations on the head and neck. Rules and methods of dissection/connection of tissues. Ligation and suturing of vessels clamped with hemostatic clamps. Characteristics of modern suture material.Types of knots: simple, surgical, square. Removal of the skin suture.

Types of local anesthesia (application, infiltration and block anesthesia). Features of anesthesia during operations on the organs of the maxillofacial region.

3.2 Operational techniques performed on the neck

Methods of temporary and permanent hemostasis: application of a hemostatic clamp and ligation of the vessel in the wound; ligation of the vessel throughout, vascular suture.

Neck operations. Incisions for phlegmon and abscesses of the neck. Surgical access to the organs of the neck. Features of surgical treatment of neck wounds. Exposure and ligation of the external carotid artery in the carotid triangle. Conicotomy. Upper/lower tracheostomy: indications, surgical technique; possible complications. Vagosympathetic block: indications, technique; signs indicating the effectiveness of implementation.

3.3. Operational techniques performed on the head

Operations on the facial part of the head. Types of block anesthesia of the trigeminal nerve branches. Target points for anesthesia of the inferior alveolar nerve, mental, infraorbital, nasopalatine, palatine, tuberal and buccal anesthesia. Rules and stages of surgical treatment of wounds of the maxillofacial region. Typical incisions for abscesses and phlegmon of the maxillofacial region. Resection of the maxilla and mandibula.

Neurocranium operations. Rules for the surgical treatment of craniocerebral wounds. Technique of hemostasis in case of damage to the soft tissues of the cranial vault, middle meningeal artery, sinuses of the dura mater of the brain. Trepanation of the mastoid process. Resection and osteoplastic cranium trepanation

ACADEMIC DISCIPLINE «TOPOGRAPHIC ANATOMY AND OPERATIVE SURGERY» CURRICULAR CHART

Section, topic #	Section (topic) name	number of hours			Self-studies	Form of control
		lectures (including supervised student independent work)	supervised student independent work	practical		
1.	**TOPOGRAPHIC ANATOMY OF THE NECK**	-	-	**16**	**17**	
1.1.	**Superficial anatomy of the neck. Fascia and spaces of the neck** 1. Upper and lower border of the neck. 2. Projection on the skin of the neck of the following anatomical formations: common, external, internal carotid and subclavian arteries; sensitive branches of the cervical plexus; supraclavicular part of the brachial plexus; phrenic nerve; submandibular gland; isthmus of the thyroid gland; internal, external and anterior jugular veins. 3. Division of the neck into regions; boundaries. 4. The borders of the triangles of the neck. 5. Superficial, suprahyoid, infrahyoid and deep muscles of the neck: origin and insertion, function; blood supply and innervation. 6. Topography of the spaces of the neck, communication with the spaces of other areas of the human body. 7. Classification of the fascia of the neck according to V. N. Shevkunenko. 8. Classification of the fasciae of the neck according to the International anatomical terminology.	-	-	4	5	Computer tests, interviews, accounts of classroom practical exercises with oral defense, filling flash cards, visual laboratory classes

	9. Places of fixation of fascia on the bones, its relative positions. 10. Topography of spaces of the neck, communication with spaces of other areas of the human body.					
1.2.	**Anterior region of the neck** 1. The boundaries of the suprahyoid region of the neck and the triangles included in its composition. 2. Layered structure of the submandibular triangle; topography of the vessels and nerves lying in it. 3. Submandibular gland: structure, blood supply and innervation; topography of the submandibular duct; submandibular space. 4. Lingual triangle (Pirogov's triangle): borders; topography of the lingual artery and vein. 5. Layered structure of the submental triangle. 6. Intermuscular fissures of the floor of the mouth. 7. The boundaries of the sublingual space and the topography of the anatomical structures located in it. 8. Structure, blood supply, innervation of the sublingual gland. Topography of the greate and small sublingual ducts. 9. The boundaries of the sublingual region and the triangles included in its. 10. Borders and layered structure of the carotid triangle. 11. Structural components of the main neurovascular bundle of the neck and its relative positions.	-	-	4	4	Computer tests, interviews, accounts of classroom practical exercises with oral defense, filling flash cards, visual laboratory classes
1.3.	**Sternocleidomastoid region of the neck** 1. Borders and layered structure of the sternocleidomastoid region, topography of the elements of the main neurovascular bundle of the neck. 2. Borders and contents of the scaleno-vertebral triangle. 3. The course of the subclavian artery, its divisions, branches. 4. Course and branches of the vertebral artery. 5. Course and branches of the internal thoracic artery. 6. Thyrocervical trunk: topography; branches and areas of its	-	-	4	4	Computer tests, interviews, accounts of classroom practical exercises with oral defense, filling flash cards, visual laboratory classes

	branching. 7. Boundaries and content of the interscalene space (triangle) and prescalene space. 8. Jugular venous angle: topography, sources of formation, relationships with other neurovascular structures. 9. Indications and technique for performing catheterization of the subclavian vein. Indications for cannulation of the thoracic duct. 10. Structure and topography of the cervical sympathetic trunk. 11. Topography and branches of the upper, middle cervical and cervicothoracic ganglions of the sympathetic trunk, branches and zones of innervation.					
1.4.	**Lateral region of the neck** 1. Borders of the lateral region of the neck. 2. Layered structure of the omoclavicular and omotrapezoid triangles. 3. Space of the lateral triangle of the neck. 4. Interscalene space: boundaries, contents (subclavian artery, brachial plexus).	-	-	4	4	Computer tests, interviews , filling flash cards, visual laboratory classes, control questioning
2.	**TOPOGRAPHIC ANATOMY OF THE HEAD**	**4**	**2**	**23**	**22**	
	Topography of the face. Primary surgical treatment of wounds of the maxillofacial region 1. Proportions of the face. 2. Innervation of the skin of the face 3. Facial muscles and spaces of the anterior region of the face. 4. Topography of the infraorbital region. 5. Topography of the buccal region. 6. Topography of the parotid-masticatory region. 7. The main stages of primary surgical treatment of wounds of the maxillofacial region. 8. General principles for closing skin defects on the face. Types of cosmetic sutures. 9. Skin plastic surgery: classification. 10. Resection of the lower jaw with a violation of its integrity.	2	1	-	-	

	11. Resection of the upper jaw.					
2.1.	**Superficial anatomy of the head. Anterior section of the facial region of the head**	-	-	**11**	**10**	
	The bone base and soft tissues of the face: blood supply, innervation and lymph drainage 1. Borders of the head and neck. The division of the head into the facial and neurocranium. Areas of the facial part of the head; facial proportions and division into thirds. 2. Sources of innervation of the skin of the face. Projection of exit points under the skin of sensitive branches of the trigeminal nerve. 3. Blood supply of the face; topography of the facial, superficial temporal arteries, parotid duct. 4. Venous drainage from the skin of the face; venous anastomoses and its significance in the spread of infection. 5. Regional lymph nodes of the head. Pathways of lymph drainage from the facial part of the head. 6. Morphofunctional characteristics of the facial muscles: origin and insertion, fiber orientation, functions; blood supply 7. Topography of motor branches of the facial nerve, parotid plexus. 8. Clinical manifestations of damage to the facial nerve after leaving the stylomastoid foramen.	-	-	4	4	Computer tests, interviews, visual laboratory classes , filling flash cards
	Topography of the buccal and infraorbital region. Primary surgical treatment of wounds of the facial section of the head 1 Buccal and infraorbital region: borders, layered structure. 2. Spaces: buccal and canine fossa. Buccal fat pad. Possible ways of spreading infection from the buccal region. 3. Requirements for the primary surgical treatment of wounds of the facial section of the head. 4. The main stages and features of the primary surgical treatment of wounds of the facial section of the head. 5. General principles for closing wounds in the facial region of the head (needles, suture material, types of sutures).	-	-	4	4	Computer tests, interviews, visual laboratory classes , filling flash cards, essays

	6. Surgical treatment of phlegmons and abscesses of the face of an odontogenic reason: places of skin incisions at autopsy; the main stages of the operation. 7. Types of skin-plastic operations performed to close extensive defects on the face.					
	The eyeball and related structures 1. Bones that form the walls of the orbit. 2. Communication of the orbit with the cranial cavity and other areas of the head. 3. Tunics of the eyeball: fibrous, vascular, internal (retina). 4. Optic nerve (II). The conductive path of the visual analyzer. 5. The structure of the lens, the vitreous body. Chambers of the eyeball. Formation and outflow of aqueous humor. 6. Assessory structures of the eye. External muscles of the eyeball, sources of innervation and blood supply. 7. Layered structure of the eyelids. Conjunctiva. Lacrimal apparatus. Innervation, blood supply. 8. Optic nerve (V1): branches, areas of innervation. 9. Ophthalmic artery: branches, areas of blood supply 10. Ophthalmic veins: venous drianage, anastomoses with facial veins. 11. Fascial sheath of eyeball. The fatty body of the orbit, connections with the spaces of the face. 12. Clinical manifestations of damage to the nerves of the orbit.	-	-	3	2	Computer tests, interviews, accounts of classroom practical exercises with oral defense, filling flash cards
2.2	**Lateral region of the facial part of the head**	**2**	**-**	**4**	**4**	
	Topography of the parotidomasticatory and deep facial region 1. Borders and layered structure of the parotidomasticatory region. 2. Parotid gland: topography, parts, parotid duct. 3. The structure of the fascia of the parotid gland, its weak points. Features of inflammation of the gland in children and adults. 4. Relationship of the parotid gland with neurovascular stuctures: facial nerve, external carotid artery, submandibular and internal	-	-	4	4	Computer tests, interviews, accounts of classroom practical exercises with oral defense, filling flash cards

	jugular vein, auriculotemporal nerve, lymph nodes. 5. Blood supply, innervation and lymphatic drainage from the parotid gland. 6. Borders of the deep lateral region of the face. Bony walls of the infratemporal and pterygopalatine fossae,communication with other areas of the head. 7. Anatomical structures located in the deep lateral region of the face. 8. Spaces of the deep lateral region of the face. 9. Communication of spaces of the deep lateral region of the face with other regions of the head and neck. 10. Sources of infection of spaces and possible ways of spreading phlegmon of the deep lateral region of the face.					
.	**Topography of the deep lateral region of the face and fronto-parietal-occipital region** 1. Borders of the deep region of the face. 2. Spaces of the deep region of the face. 3. Possible ways of spreading the infection. 4. Spaces of the oral cavity floor. 5. The main stages of surgical intervention for phlegmon and abscesses of the maxillofacial region. 6. Borders of the fronto-parietal-occipital region. 7. Layered structure of the fronto-parieto-occipital region. 8. Layered structure of the temporal region. 9. Clinical anatomy of the neurocranium. 10.Craniotomy: purpose, technique for performing the operation.	2	1	-	-	

2.3	**NEUROCRANIUM**	-	-	**8**	**8**	
	Topography of the fronto-parietal-occipital and temporal regions 1. The border of the facial part of the head and neurocranium. Regions of neurocranium. 2. Skeleton of neurocranium. The bone base of the temporal region. Features of the structure of the squamous part of the temporal bone. 3. External and external base of the skull: foramina, canals and its contents. 4. Projection on the skin of the temporal and occipital arteries; supraorbital, auriculotemporal and lesser occipital nerves. 5. Borders and layered structure of the fronto-parieto-occipital region. 6. Blood supply, innervation and lymph drainage from the skin of the fronto-parieto-occipital region. Anatomical landmarks for block anesthesia. **7.** The occipito-frontalis muscle: origin and insertion, function, blood supply and innervation. 8. Spaces of the fronto-parieto-occipital region. Localization of hemorrhages in injuries of the fronto-parieto-occipital region. 9. Features of the macro- and microscopic structure of the bones of the cranial vault. Types of sutures. 10. Meninges; localization of the subdural and subarachnoid space. 11. Topography of the external and internal base of the skull. 12. Ways of circulation of cerebrospinal fluid. 13. Anastomoses between the sinuses of the dura mater and the veins of the soft tissues of the head. Diploic and emissary veins. 14. Borders and layered structure of the temporal region. 15. Temporal muscle: origin and insertion, functions, blood supply and innervation. 16. Localization and characteristics of thespaces of the temporal region.	-	-	4	4	Computer tests, interviews, visual laboratory classes , filling flash cards

	Topography of the mastoid process. Surgical treatment of craniocerebral wounds. trepanation of the skull 1. Area of the mastoid process: borders, layered structure. 2. Boundaries of Shipo's trepanation triangle. Projection of the canal of the facial nerve, posterior cranial fossa and sigmoid sinus on the surface of the mastoid process.	-	-	4	4	Computer tests, interviews, filling flash cards, colloquium
3.	**OPERATIVE SURGERY**	**2**	-	**12**	**12**	
3.1	**General issues of operative surgery** 1. Basic concepts of operative surgery: surgical access, operative procedure, way out of the operation. 2. Classification of surgical operations by purpose and timing. 3. Methods of anesthesia in surgery: general and local anesthesia. 4. Characteristics of the main types of local anesthesia (application, infiltration, block, spinal anesthesia). 5. Technique for performing infiltration anesthesia. 6. Surgical instruments: classification. 7. General characteristics of instruments for dissection. 8. General characteristics of instruments for hemostasis. 9. General characteristics of grasping instruments. 10. Connecting tissues: tools and materials; basic principles of wound closure. The concept of primary and secondary sutures. 11. Classification and main characteristics of the suture material. 12. Surgical knots: simple (female), surgical, square. 13. Simple interrupted suture. Skin suture technique. 14. Continuous sutures: the technique of applying a simple continuous and Multanovsky's blanket s suture	-	-	4	4	Computer tests, interviews, accounts of classroom practical exercises with oral defense, evaluation using virtual simulators
	Subject and tasks of topographic anatomy and operative surgery. Neck operations 1. Subject and tasks of topographic anatomy and operative surgery. 2. Surgical access, operative procedure. 3. Types of hemostasis.	2	-	-	-	

	4. Exposure and ligation of the external carotid artery. 5. Tracheostomy.					
3.2	**Operational techniques performed on the neck** 1. Types of hemostasis from the main arteries of the systemic circulation. 2. Differences between direct and indirect surgical access to the arteries. 3. Indications for ligation of the external carotid artery. 4. Technique of indirect access to the external carotid artery. 5. Absolute and relative indications for tracheostomy. 6. The main stages of tracheostomy. Differences in the technique of performing upper and lower tracheostomy. 7. Possible early and late complications of tracheostomy and ways to prevent them. 8. Surgical treatment of abscesses and phlegmon of the neck: suprasternal space, lateral triangle of the neck, neurovascular bundle of the neck, previsceral and retrovisceral spaces. 9. Drainage of phlegmon of the submental, submandibular triangle and the floor of the mouth. 10. Congenital malformations (cysts and fistulas of the neck): sources of formation, methods of treatment. 11. Indications, technique and objective signs of the effectiveness of vagosympathetic block.	-	-	4	4	Computer tests, interviews, essays, conference reports, evaluation using virtual simulators
3.3	**Operational techniques performed on the head** 1. Requirements for the primary surgical treatment of wounds of the facial section of the head. 2. The main stages and features of the primary surgical treatment of wounds of the facial part of the head. 3. General principles for closing wounds in the facial region of the head (needles, suture material, types of sutures). 4. Places of skin incisions for drainage phlegmons and abscesses of an odontogenic reasons, the main stages of the operation.	-	-	4	4	Computer tests, interviews, accounts of classroom practical exercises with oral defense, filling flash cards, evaluation using virtual simulators Credit

	5. Types of skin-plastic operations performed to close extensive defects on the face. 6. The main stages of primary surgical treatment of wounds of the neurocranium, the rules for excising the edges of the wound. Features of imposing a hemostatic clamp on the vessels in the subcutaneous tissue of the fronto-parieto-occipital region. 7. Plastic and reconstructive operations on the head. 8. Indications for craniotomy. 9. Sources of epidural hematoma formation, places of its localization. 10. Topography of the middle meningeal artery and its branches. 11. Methods of craniotomy. The main stages of the operation. 12. Types of hemostasis from the sinuses of the dura mater					
		6	**2**	**51**	**51**	

INFORMATION AND INSTRUCTIONAL UNIT

LITERATURE

Basic (relevant):

1. Stenko, A.A., Kudlo V.V. Topographical anatomy and operative surgery = Топографическая анатомия и оперативная хирурги/ A.A. Stenko. – Minsk : Novoe Znanie, 2022,– 384 p.

2. Tsyhykalo, O. V. Topographical anatomy and operative surgery : textbook for English-speaking foreign students / O. V. Tsyhykalo . – Vinnytsia: Nova Knyha, 2017, 2018. – 528 p.

Additional:

3. Кабак, С. Л. Практикум по анатомии человека: «Clinical anatomy: head and neck Anatomy work book»: практикум для самостоятельной работы студентов 1 курса МФИУ, обучающихся на английском языке/ С. Л. Кабак. - 7-е изд., испр. доп. – Минск: БГМУ, 2022. – 88 с.

4. Hansen, John T. Netter's Clinical anatomy / John T.; ill. by F. H. Netter. – Philadelphia : Elsevier, 2014. – 46 p.

5. Клюй, Е. В. Топографическая анатомия и оперативная хирургия шеи = Topographic anatomy and operative surgery of the neck : учеб.-метод. пособие. – Минск : БГМУ, 2018. – 20 с.

METHODOLOGICAL RECOMMENDATIONS FOR THE ORGANIZATION AND PERFORMANCE OF SUPERVISED STUDENT INDEPENDENT WORK IN THE ACADEMIC DISCIPLINE

Main forms of supervised student independent work:
preparation and presentation of abstracts;
video lectures
presentation of reports;
taking notes of original sources (sections of anthologies, collections of documents, monographs, textbooks);
computer testing;
preparation of tests for the organization of mutual assessment;
preparation of didactic materials.

Control of supervised student independent work is carried out in the form of:
test paper;
final class, colloquium in the form of an oral interview, written work, testing;
discussion of absracts;
assessment of an oral reply to a question, presentation, report or problem solving;
individual interview.

LIST OF AVAILABLE DIAGNOSTIC TOOLS

The following forms are used for competences assessment:

Oral form:

interviews;

conference reports;

colloquiums.

Written form:

control questioning;

essays.

Oral-written form:

accounts of classroom practical exercises with oral defense;

credit;

filling flash cards.

Technical form:

computer tests;

visual laboratory classes.

Simulation form:

evaluation using virtual simulators.

LIST OF AVAILABLE TEACHING METHODS

Traditional method (lecture, laboratory practicals);

Active (interactive) methods:

Problem-Based Learning (PBL);

Research-Based Learning (RBL).

LIST OF PRACTICAL SKILLS

1. To use general surgical instruments.
2. To tie simple, surgeon's, and square knots.
3. To make the tissue connection imposing simple interrupted; simple continuous and Multanovsky' blanket; vertical and horizontal matrass; intradermal stitches.
4. To remove the skin sutures.
5. To use hemostatic clamps for hemostasis from damaged vessel and make a vasologation.
6. To use the Dechamp's needle for vasoligation.
7. To insert the tracheostomy tube.

LIST OF EQUIPMENT USED

1. A kit of surgical instruments.
2. Model of the anterior abdominal wall.
3. Human skeleton.
4. Vertebral column.
5. Skull.
6. Occipital bone.
7. Frontal bone.
8. Sphenoid bone.
9. Ethmoid bone.
10. Temporal bone.
11. Auditory ossicles.
12. Maxilla.
13. Mandibula.
14. Base of the skull.
15. The vault of the skull.
16. Wet anatomical preparations: the brain (base, sagittal section, brain stem), sagittal section of the head, tooth models, casts of the upper and lower jaws, tongue, larynx, larynx cartilages, larynx with thyroid gland, trachea.
17. Tables.
18. Anatomical models.
19. Flash cards.
20. Anatomical atlases.
21. Museum anatomical preparations.
22. Educational hardware complex «Anatomical table».
23. Computer classes, projection equipment.
24. Educational computer programs.

LIST OF LECTURES

1. Topography of the face. Primary surgical treatment of wounds of the maxillofacial region.

2. Topography of the deep lateral region of the face and the fronto-parietal-occipital region.

3. Subject and tasks of topographic anatomy and operative surgery. Neck operations.

LIST OF PRACTCAL STUDIES

1. General issues of operative surgery.

2. Superficial anatomy of the neck. Fascia and spaces of the neck. Neck: borders, areas and triangles. Sources of development, topography, blood supply, innervation and function of neck muscles. Fascia of the neck: classification according to VN Shevkunenko and international anatomical terminology. Neck spaces.

3. Anterior region of the neck. The topography of the suprahyoid region: layered structure of the submental and submandibular triangle. Topography of the

sublingual region of the neck. Layered structure of the carotid triangle. The main arteries and veins of the neck

4. Sternocleidomastoid region of the neck
5. Lateral region of the neck
6. Operation techniques performed on the neck
7. Bone base and soft tissues of the face: sources of blood supply, innervation and lymph drainage
8. Topography of the buccal and infraorbital region. Primary surgical treatment of wounds of the facial section of the head.
9. The eyeball and related structures
10. Lateral region of the facial section of the head. Topography of the parotidomasseteric and deep facial region
11. Topography of the fronto-parietal-occipital and temporal region
12. Topography of the mastoid region. Surgical treatment of craniocerebral wounds. trepanation of the skull
13. Operation techniques performed on the head

THE THEMES OF ESSAYS

1. Individual features of the shape and size of permanent teeth.
2. The thickness of the walls of the front teeth. Security zones.
3. The thickness of the walls of the lateral teeth. Security zones.
4. Dependence of the shape of the teeth on the configuration of the face.
5. Teeth color.
6. Anomalies in the color of the teeth.
7. Various manifestations of anomalies in the color of human permanent teeth.
8. Resorption of the roots of primary teeth.
9. Terms of eruption and formation of roots of permanent teeth.
10. Features of the structure of the alveolar process in children.
11. Surgical suture material.
12. Congenital cleft lip and palate.
13. Anatomical and topographic features of the middle zone of the face. Traumatic injuries of the middle zone of the face.
14. Features of the structure of the maxillofacial region of the child.
15. Age anatomy of the tooth cavity. Deltoid branches of the root canal. Additional root canals.
16. Some aspects of the evolutionary theory of tooth development from the point of view of a dentist.
17. Age anatomy of the neurocranium and facial skull. Abnormal forms of the cranial vault.
18. Bite anomalies.
19. Dental manifestations of hereditary diseases and syndromes.
20. Methods of anesthesia used in dentistry.
21. Phlegmon of the floor of the mouth.
22. The use of implants in dentistry.

23. Modern methods of visualization of anatomical structures in dentistry.

24. Options for the location of the canal of the lower jaw relative to the roots of the teeth.

25. Variants of bifurcation of the mandibular canal.

26. Variants of the topography of the mental foramen. Additional mental foramen.

27. Anatomical landmarks for identification the location of the mandible foramen and individual options for its localization.

28. Non-standard anatomy of the roots of the teeth of the upper and lower jaws: options for its number, size and shape.

29. Variants of the structure of the root canals of teeth: topography of additional (additional) root canals; ways to detect them in a living person.

30. Variant anatomy of the shape and size of the maxillary sinus.

31. Options for the relative position of the top of the roots of the teeth of the upper jaw relative to the lower wall of the maxillary sinus and the nasal cavity.

32. Clinical significance of intraosseous anastomosis between the posterior superior and anterior superior alveolar arteries. Methods for its detection in a living person.

33. Topography of the mylohyoid canal (bridge).

34. Individual variants of the innervation of the teeth and mucous membrane of the gums and hard palate. Cross-innervation of the anterior teeth.

35. Shapes and proportions of the face. Age-related changes in the structure of the bones of the facial skull.

PROTOCOL OF THE CURRICULUM APPROVAL BY OTHER DEPARTMENTS

Title of the discipline requiring approval	Department	Amendments to the curriculum in the academic discipline	Decision of the department, which designed the curriculum (date, protocol #)
1.Human Anatomy	Human morphology	-	Protocol # 13 of 10.06.22
2.Histology, Cytology, Embryology	Human morphology	-	Protocol# 13 of 10.06.22

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Curriculum content, composition and the accompanying documents comply with the established requirements.

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28.06. 2022

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