Ministry of Healthcare of Ukraine
Ukrainian Medical Stomatological Academy

Department of neurological diseases

SYLLABUS

General medical training (ophthalmology, neurology, including neurostomatology, dermatology, venereology, psychiatry, narcology, medical psychology, physical rehabilitation, sports medicine, endocrinology)

(title of the academic discipline)

academic and professional level	the second (master's) level of higher education
field of knowledge	22 «Healthcare»
Specialty	221 «Dentistry»
academic qualification	Master of Dentistry
professional qualification	Dentist
academic and professional program	221 «Dentistry»
mode of study	full-time
course(s) and semester(s) of study of the discipline	4 course, VII semester

Module 2. **Neurology, including neurostomatology**

(Compulsory discipline)

«RESOLVED»
at the meeting of the Department of neurological diseases with neurosurgery and medical genetics

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Head of the Department_____ Mykhailo DELVA

Minutes as of ____ August 2024, No. 1

Poltava – 2024

INFORMATION ABOUT LECTURERS WHO DELIVER THE ACADEMIC DISCIPLINE

Surname, name, patronymic of the lecturer (lecturers), scientific degree, academic title	Mykhaylo Delva, Doctor of Medicine, Professor Nataliya Lytvynenko, Doctor of Medicine, Professor Victoria Pinchuk, Doctor of Medicine, Associate Professor Halyna Silenko, Doctor of Medicine, Associate Professor Delva Iryna Ivanivna, doctor of medicine, professor Tatyana Purdenko, Doctor of Medicine, Associate Professor Angelina Kryvchun, Doctor of Medicine, Associate Professor Kateryna Tarianyk, Doctor of Medicine, Associate Professor Olena Palenka candidate of medical science, assistant Oleksandra Poddubna, candidate of medical science, assistant Svitlana Ivashchenko; assistant
Profile of the lecturer (lecturers)	https://ndiseases.pdmu.edu.ua/
Contact phone	Treatment bases: Neurological Department Communal Enterprise "Poltava Regional Clinical Hospital named after M.V. Sklifosovsky of the Poltava Regional Council" - str. Shevchenko, 23, t. (053) 56-42-37, (0532) 52-49-05. Neurological Department Communal Enterprise "1 City Clinical Hospital of Poltava City Council", str. Olesya Honchara, 27, phone number (053) 67-62-91. Neurological Department Communal Enterprise "2 City Clinical Hospital of Poltava City Council" str. Dukhova 6 B, t. (0532) 7-06-34 Neurological Department Communal Enterprise "3 City Clinical Hospital of Poltava City Council" sq. Glory 2
E-mail:	neurology@pdmu.edu.ua
Department page at the website of UMSA	https://ndiseases.pdmu.edu.ua/

MAIN CHARACTERISTICS OF THE ACADEMIC DISCIPLINE

The scope of the academic discipline (module)

Number of credits / hours – 1,5/45, of which:
Lectures (hours) – 6
Practical classes (hours) – 30
Self-directed work (hours) – 9
Type of control – final modular control (FMC).

The policy of the academic discipline

During organizing the educational process at PDMU, teachers and students of higher education act in accordance with:

Regulations on the organization of the educational process (https://www.pdmu.edu.ua/storage/department-npr/docs_links/o3MhEcAIDHFI4AilBuVYu8T0PfVtJeVK6qnv33oi.pdf);

Regulations on academic integrity of higher education applicants and employees of Poltava State Medical University (www.umsa.edu.ua/storage/sections_nv/docs_links/zr3FjyN6oKY7qqQax2EfYjhdlnZg7YvhqyD58WZj.pdf)

Rules of internal procedure for students of Poltava State Medical University (https://www.pdmu.edu.ua/storage/department-npr/docs_links/OaN2nwysLPFAUDRvuDPvFSpzM1j9E9CwQQkgr93b.pdf)

While studying at the Department of Nervous Diseases, a student of higher education must adhere to the rules of conduct accepted at the University. and when working with patients on the ward.

Students of higher education are obliged to come to classes on time, according to the class schedule. It is not allowed to violate the schedule of the educational process and to allow non-fulfillment of the educational plan and individual educational plan, to be late for classes, to miss classes without valid reasons. Missed classes are subject to mandatory completion for all students, regardless of the sources of funding for their studies. A student of higher education at Poltava State Medical University makes up missed classroom classes, regardless of the reason for the absence, in electronic classes No. 1, No. 2, No. 3, according to the work schedule, in accordance with the "Regulations on making up for missed classes and unsatisfactory grades by students of higher education in Poltava State Medical University

During their stay at the department and clinical bases, the participants of the educational process must comply with the requirements for the appearance of persons who work and study at the university, be dressed in the appropriate medical uniform

Students of higher education are prohibited from leaving the classroom without the teacher's permission during class, using a mobile phone and other means of communication and receiving information during class without the teacher's permission, engaging in extraneous activities, distracting other students, and disturbing the teacher. During the stay at the clinical base and in the surrounding areas, the participants of the educational process are prohibited from smoking.

While studying the discipline, students of higher education are obliged to observe the rules of academic integrity, which includes: independent performance of educational tasks, tasks of current and final control of study results; references to sources of information in case of use of ideas, developments, statements, information; compliance with the legislation on copyright and related rights; provision of reliable information about the results of one's own educational (scientific, creative) activities, used research methods and sources of information.

Description of the academic discipline Module 2. Neurology, including neurostomatology:

Neurology is one of the disciplines of the clinical stage of undergraduate physician training, during which the students learn theoretical basics, skills of neurological patients examination, methodology of making a diagnosis of a neurological disease, choice of treatment tactics and providing urgent medical care in case of medical emergencies. A special place is given to the study of acute conditions - disorders of the cerebral blood flow, neurological pain syndromes, disorders of the functions of the autonomic and peripheral nervous systems. A patient with all his / her peculiarities is the main subject of study at lectures and practical classes. One section of neurology is neurostomatology, which studies neurogenic diseases of the face and oral cavity.

The study of the discipline is provided in the 4th year of study.

Pre-requisites and post-requisites of the academic discipline (interdisciplinary links) Module 2. Neurology, including neurostomatology

a) neurology as an academic discipline is based on the study of medical biology, biological and bioorganic chemistry, histology, physiology and pathological physiology, human anatomy and pathomorphology, propaedeutic disciplines therapeutic profile, pharmacology, radiology and integrates with these disciplines;

b) neurology as an academic discipline integrates with other clinical disciplines: internal medicine, therapeutic dentistry, surgical dentistry, pediatric therapeutic dentistry, otorhinolaryngology, social medicine, etc.

The aim and tasks of the academic discipline Module 2. Neurology, including neurostomatology:

The aim of studying the module 2. «Neurology, including neurostomatology» of discipline «General medical training» are the ultimate purposes based on EPP for training of a doctor in the specialty in accordance with the block of its content module (professional and practical training) and is the basis for providing of educational content discipline. The description of goals is formulated through skills in the form of target tasks (actions).

The main tasks of studying the module 2. «Neurology, including neurostomatology» are:

- Identify the main symptoms and syndromes of the lesions of different parts of the nervous system.
- Interpret data on functional anatomy and clinical physiology of the nervous system.
- Identify etiological factors and pathogenetic mechanisms of development of major neurological and neurostomatological diseases.
- Preliminary diagnosis of major neurological and neurostomatological diseases.
- Analyze the main indicators of laboratory-instrumental methods of research in neurological practice.
- Plan the practice of managing a patient with neurological and neurostomatological pathology.

Competences and learning outcomes in accordance with the academic and professional program, the formation of which is facilitated by the discipline (integral, general, special)

Integral competencies – ability to solve typical and complex specialized tasks and practical problems in field of knowledge «Dentistry» for professional health care activities, or in the process of study that involves research and/or innovation, and is characterized by complexity and uncertainty of conditions and requirements.

General competencies:

1. Ability to abstract thinking, analysis and synthesis.
2. Knowledge and understanding of the subject area and understanding of professional activity
3. Ability to apply knowledge in practical situations.
4. Ability to communicate both verbally and non-verbally in official language.
5. Ability to communicate in English. Ability to use international Greco-Latin terms, abbreviations and clichés in professional oral and written speech.
6. Skills in the use of information and communication technologies.
7. Ability to search, process and analyze information from various sources.
8. Ability to adapt and act in a new situation.
9. Ability to identify, pose and solve problems.
10. Ability to be critical and self-critical.
11. Ability to work in a team.
12. Ability to act socially responsibly and consciously.
13. Ability to realize their rights and responsibilities as a member of society, to realize the values of civil (free democratic) society and the need for its sustainable development, the rule of law, human and civil rights and freedoms in Ukraine.
14. The ability to realize one's rights and responsibilities as a member of society, to realize the values of a civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine.
15. The ability to preserve and multiply moral, cultural, scientific values and achievements of society based on an understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technologies, to use various types and forms of motor activities for active recreation and leading a healthy lifestyle.

Special competencies:

1. Ability to collect medical patient’s information and analyze clinical data.
2. Ability to interpret the results of laboratory and instrumental investigations.
3. Ability to diagnose: determine the preliminary, clinical, final, concomitant diagnosis, emergencies.
4. Ability to plan and implement measures for the prevention of diseases of organs and tissues of the oral cavity and maxillofacial region.

5. Ability to design the process of medical care: to determine approaches, plan, types and principles of treatment of diseases of organs and tissues of the oral cavity and maxillofacial region.

6. Ability to determine the rational mode of work, rest, diet in patients in the treatment of diseases of organs and tissues of the oral cavity and maxillofacial region.

7. Ability to determine the tactics of management of patients with diseases of organs and tissues of the oral cavity and maxillofacial region with concomitant somatic diseases.

8. Ability to perform medical and dental manipulations.

9. Ability to treat major diseases of organs and tissues of the oral cavity and maxillofacial region.

10. Ability to organize and conduct screening examinations in dentistry.

11. Ability to assess the impact of the environment on the health of the population (individual, family, population).

12. Ability to maintain regulatory medical records.

13. Processing of state, social and medical information.

13. Ability to organize and perform rehabilitation measures and care for patients with diseases of the oral cavity and maxillofacial region.

14. Ability to legally support their own professional activities.

15. Processing of state, social and medical information.

16. Ability to organize and carry out rehabilitation measures and care for patients with diseases of the oral cavity and ASHL.

17. The ability to legally support one's own professional activity.

18. The ability to provide pre-medical care according to the protocols of tactical medicine.

Program learning outcomes, the formation of which is facilitated by the discipline «General medical training», including study of module 2. Neurology, including neurostomatology:

1. Select and identify leading clinical symptoms and syndromes; to establish a probable nosological or syndromic preliminary clinical diagnosis of a dental disease according to standard methods, using preliminary data of the patient's anamnesis, data of the patient's examination, knowledge about the person, his organs and systems

2. Collect information about the general condition of the patient, assess the psychomotor and physical development of the patient, the condition of the maxillofacial area, based on the results of laboratory and instrumental studies to assess information about the diagnosis

3. Prescribe and analyze additional (mandatory and optional) methods of examination (laboratory, radiological, functional and / or instrumental) of patients with diseases of the organs and tissues of the oral cavity and maxillofacial region for the differential diagnosis of diseases.

4. To diagnose emergencies under any circumstances (at home, on the street, in a medical institution), in an emergency conditions, under martial law, in condition of lack of information and limited time.

5. To determine the tactics of managing a dental patient with somatic pathology by making an informed decision according to existing algorithms and standard schemes.

6. To organize tactics of medical aid and evacuation actions among the population, military men, in the conditions of an emergency situation, including martial law, during the detailed stages of medical evacuation, taking into account the existing system of medical and evacuation support.

7. Determine the tactics of emergency medical care, using the recommended algorithms, under any circumstances on the basis of a diagnosis of emergency in a limited time.

8. Analyze and evaluate government, social and medical information using standard approaches and computer information technology.

9. Assess the impact of the environment on the health of the population in a medical institution by standard methods.

10. Form goals and determine the structure of personal activities based on the results of the analysis of certain social and personal needs.

11. To be aware of and guided in their activities by civil rights, freedoms and responsibilities, to raise the general cultural level.

12. Adhere to the requirements of ethics, bioethics and deontology in their professional activities.

13. Organize the necessary level of individual safety (own and persons cared for) in case of typical dangerous situations in the individual field of activity.

14. Perform medical manipulations on the basis of preliminary and / or final clinical diagnosis for different segments of the population and in different conditions.

15. Perform emergency medical care, using standard schemes, under any circumstances on the basis of a diagnosis of emergency in a limited time.

16. To be aware of and be guided in one's activities by civil rights, freedoms and duties, to raise the general educational and cultural level.

17. To comply with the requirements of ethics, bioethics and deontology in their professional activities

18. To organize the necessary level of individual safety (own and the persons he cares for) in case of typical dangerous situations in the individual field of activity

19. To perform medical manipulations on the basis of a preliminary and/or final clinical diagnosis for different segments of the population and in different conditions.

20. Perform manipulations of providing emergency medical care using standard schemes, under any circumstances based on the diagnosis of an emergency in limited time.

Learning outcomes of the academic discipline:

upon completing their study in the academic discipline «Neurology including neurostomatology», higher education seeker must

know:

- principles of structure and functioning of the nervous system;
- anatomical and physiological, biochemical data of pyramidal, extrapyramidal, cerebellar systems and syndromes of their disorders;
- the concept of reception, clinical classification of sensitivity, types of sensitive disorders, topical types of sensitive disorders;
- anatomical and physiological data of cranial nerves, syndromes of their disorders;

- principles of classification, clinic, treatment and prevention of vascular diseases of the brain, infectious diseases of the nervous system;

- modern classification of paroxysmal conditions, the main types of cephalgia, treatment;

- modern aspects of etiopathogenesis, clinical forms, treatment of trigeminal neuralgia and neuropathy and its branches, shingles, glossopharyngeal and vagal nerve neuralgia, glossodynia;

- principles of diagnosis of vertebrogenic and nonvertebrogenic diseases of the peripheral nervous system;

- modern aspects of etiopathogenesis, clinical forms, treatment of autonomic prosopalgia, facial nerve syndromes of neurogenic facial diseases;

- drugs used in patients with neurological profile.

be able to:

- interpret motor disorders following motor pathway lesion at different levels, to analyze the anatomical and physiological features of the cerebellum and its syndromes;

- interpret the concept of reception, clinical classification of sensitivity, types of sensitive disorders, topical types of sensitive disorders;

- examine patients with motor and sensory disorders;

- examine the function of the cranial nerves, the autonomic nervous system, the function of the cerebral cortex;

- interpret changes in cerebrospinal fluid and meningeal symptom complex;

- interpret neuroimaging, ultrasound and electrophysiological methods of examination of neurological patients;

- formulate a preliminary and provide a differentiated diagnosis of neurological and neurostomatological diseases;

- prescribe treatment regimens for nervous system diseases using standards of treatment and principles of evidence-based medicine.

Thematic plan of lectures (by modules), specifying the basic issues, which are considered at the lecture

Seq. No.	Topics of lectures **Module 2 «Neurology, including neurostomatology»**	Number of hours
	Content module 1. General neurology.	
1	Pathology of movement. Receptor function of the nervous system. 1. The main stages of philo- and ontogenesis of nervous system. Structural and functional unit of the nervous system. The main anatomical and topographic areas of the nervous system: hemispheres of the brain, subcortical ganglia, brainstem, spinal cord, roots, spinal ganglia, plexus, peripheral nerves. 2. The concept of reflex and reflex arc, voluntary and involuntary reflexes, central parts of the skin, tendon and periosteal reflexes. 3. Voluntary movements pathways. 4. Signs of peripheral and central paresis. 5. Topical diagnosis of movement pathology. 6.Methodics of voluntary movements examination 7. Anatomy of the cerebellum	2

	8. The main functions of the cerebellum 9. Cerebellum pathways, cerebellum peduncules 10. Methods of movements coordination study 11. Differential diagnosis of ataxia 12.Anatomical structures and pathways of extrapyramidal system 13. Function of extrapyramidal system 14. Clinical signs of neostriatum lesions 15. Clinical signs of pallido-nigral syndrome.	
	Content module 2. Special neurology. Neurostomatology	
1	Pathology of the autonomic nervous system 1.Anatomic-physiological features and functions of the autonomic nervous system: segmental and suprasegmental parts of the autonomic nervous system 2. Methods of vegetative functions examinations 3. Syndromes of suprasegmental autonomic nervous system impairments. 4. Impairments of segmental autonomic nervous system. 5. Cervical ganglionitis (Oppenheim syndrome). 6. Ganglionitis of sphenopalatine ganglion (Slyuder's syndrome). 7. Ganglionitis of ear ganglion. 8. Mandibular and sublingual ganglionitis. 9. Ganglionitis of cervical sympathetic ganglia. 10. Cluster cephalgia. Etiology, clinic, treatment.	2
2	Basic neurostomatological diseases 1. Trigeminal neuralgia mainly of central genesis. Classical trigeminal neuralgia. 2. Postherpetic lesion of trigeminal nerve branches. 3. Trigeminal neuralgia mainly of peripheral genesis. Odontogenic trigeminal neuralgia 4. Nasal nerve neuralgia (Charlene's syndrome). 5. Neuralgia of cervico-temporal nerve (Frey's syndrome). Etiology, pathogenesis, clinic, diagnosis, differential diagnosis, treatment. 6. Neuropathy of buccal nerve 7. Neuropathy of lingual nerve (glossalgia). 8. Neuropathy of upper alveolar nerve. 9. Iatrogenic trigeminal neuropathies. Neuralgia of the glossopharyngeal nerve. 10. Eardrum nerve neuralgia (Reichert syndrome). 11. Sublingual nerve neuralgia. 12. Glossodynia. Etiology, clinic, treatment.	2
	Total	6

Thematic plan of seminar classes by modules and content modules, specifying the basic issues, which are considered at the seminar class

Thematic plan of practical classes by modules and content modules, specifying the basic issues, which are considered at the practical class

Seq. No	**Title of the topic** **Module 2 «Neurology, including neurostomatology»**	Number of hours
	Content module 1: General neurology.	

1.	Principles of structure and functioning of the nervous system. Voluntary movements and their disorders. Pyramid system. Symptoms of central and peripheral paresis. Extrapyramidal system, lesion syndromes. Cerebellum, cerebellar syndromes. 1. The main stages of philo- and ontogeny of the nervous system. Structural and functional unit of nervous system. The main anatomical and topographic areas of nervous system: hemispheres of the brain, subcortical ganglia, brainstem, spinal cord, spinal roots, spinal ganglia, plexus, peripheral nerves. 2. The concept of reflex and reflex arc, conditioned and unconditioned reflexes, central parts of skin, tendon and periosteal reflexes. 3. Voluntary movements pathways. 4. Signs of peripheral and central paresis 5. Topical diagnosis of movement pathology 6.Methodics of voluntary movements examination 7. Anatomy of cerebellum 8. The main functions of the cerebellum 9. Cerebellum pathways, cerebellum peduncules 10. Methods of coordination 11. Differential diagnosis of ataxia 12.Anatomical structures and pathways of 13. Extrapyramidal system functions 14. Clinical signs of neo-striatum lesions 15. Clinical signs of pallido-nigral syndrome.	2
2.	Sensitive system and its impairment symptoms. Kinds and types of sensitive disorders. Localization of functions in the cerebral cortex. Symptoms of lesion. Cerebrospinal fluid, its changes. Meningeal syndrome. 1. Clinical classification of sensation 2. Superficial and deep sensations pathways 3. Clinical types of sensitivity disorders 4. Clinical kinds of sensitivity disorders 5. Methodology of sensation examination 6. Topical diagnosis of sensitivity pathways lesions 7. The structure of the cerebral hemispheres. Cyto- and myeloarchitectonics of the cortex. Localization of functions in cerebral cortex. 8. Praxis. Types of apraxia: constructive, ideatorial, motor 9. Language. Language disorders: motor, sensory, amnestic aphasia 10.Brain and spinal cord covers. The physiology of liquid formation. Normal cerebrospinal fluid content, changes due to meningitis, tumors, hemorrhagic stroke, tuberculosis 11. Meningeal symptoms	2

3.	Pathology of olfactory and visual analyzers. Syndromes of oculomotor nerves lesions. 1. Pathways and nuclei topography of olfactory analyzer 2. Clinical signs of olfactory analyzer disturbances 3. Pathways of visual analyzer 4. Clinical signs of visual analyzer lesions at different levels 5. Pathways and nuclei topography of oculomotor nerves (III, IV, VI cranial nerves) 6. Clinical signs of oculomotor nerve lesions at different levels 7. Methods of olfactory and visual analyzers, oculomotor nerves examinations.	2
4.	Trigeminal, facial, vestibulo-cohlear nerve and symptoms of their disturbances. 1. Pathways and functions of trigeminal nerve 2. Clinical signs of trigeminal nerve lesions at different levels 3. Pathways and functions of facial nerve 4. Clinical signs of facial nerve impairments 5. Pathways and functions of intermediate nerve 6. Pathways and functions of vestibulo-cohlear nerve. 7. Clinical signs of vestibulo-cohlear nerve lesions at different levels 8. Methodology of V, VII, VIII cranial nerves examinations.	2
5.	Pathology of IX - XII cranial nerves. Bulbar and pseudobulbar syndromes 1. Pathways and nuclei topography of glossopharyngeal, vagal, additional and sublingual nerves 2. Functions of caudal cranial nerves 3. Clinical signs of caudal cranial nerves lesions and bulbar paralysis 4. Clinical signs of pseudobulbar paralysis 5. Technique of caudal cranial nerves examination.	2
6.	Autonomic nervous system, syndromes of their impairment. 1. Anatomy, physiology, impairment symptoms of the suprasegmental and segmental structures of the autonomic nervous system. 2. Study methodology of vegetative functions. 3. Syndromes of suprasegmental structures of the autonomic nervous system lesions. Vegetative dystonia. Permanent and paroxysmal types. Hypothalamic syndrome. Sympathetic-adrenal, vago-insular crisis 4. Lesions of segmental structures autonomic nervous system. Lesions of the brainstem, lateral horns of spinal cord, sympathetic trunk, plexus, nerves.	2
	Total	12
	Content module 2: Special neurology. Neurostomatology	
7.	Cerebrovascular diseases 1. Cerebral circulation. 2. Classification of cerebral circulation disorders. 3. Etiology and pathogenesis of cerebral circulation disorders. 4. Clinical signs of acute cerebrovascular events 5. Impairment syndromes of anterior, middle, posterior cerebral and vertebral arteries	2

	6. Differential diagnosis of ischemic and hemorrhagic strokes 7. Modern principles of treatment with standards of treatment and principles of evidence-based medicine. Indications and contraindications for surgical management of acute cerebrovascular events.	
8.	Infectious diseases of nervous system 1. Classification of meningitis by etiology, nature of exudate, cerebral arachnoiditis. 2. Symptoms of meningeal syndrome 3. Etiology and clinical signs of epidemic cerebrospinal meningitis 4. Etiology and clinical signs of serous lymphocytic choriomeningitis 5. Etiology and clinical signs of tuberculous meningitis 6. Signs of secondary purulent meningitis 7. Clinical signs of syphilitic meningitis 8. Clinical signs of cerebral arachnoiditis 9. Treatment of meningitis and arachnoiditis 10. Classification of encephalitis 11. Clinical signs of epidemic encephalitis 12. Etiology of tick-borne encephalitis, its clinical forms 13. Classification and clinical forms of neurosyphilis 14. Classification of neuroAIDS, clinical presentation 15. Classification of neuro-rheumatism.	2
9.	**Peripheral nervous system diseases.** 1. Classification of peripheral nervous system diseases 2. Etiology and clinical presentation of upper extremities' spinal nerves lesions 3. Etiology and clinical presentation of lower extremities' spinal nerves lesions 4. Plexopathy. Injuries of plexuses: cervical, upper brachial (Erb-Duchenne paralysis); lower brachial (Dejerine-Kluumpke paralysis), total brachial; lumbosacral (partial or total) 5. Infectious polyneuropathies, infectious and allergic polyradiculoneuropathies (Landry, Guillain-Barre) 6. Polyneuropathy. Toxic: chronic household or industrial intoxication (alcohol, lead, chlorophyll and others); infections (diphtheria, botulism); allergic (drug-induced and others); dysmetabolic: hypo- or avitaminosis, in endocrine diseases - diabetes, liver, kidneys diseases, etc ; dyscirculatory: periarteritis nodosa, rheumatic and other vasculitis, idiopathic and hereditary forms 7. Treatment of peripheral nervous system diseases: medical, orthopedic, surgical, sanatorium and resort. Physiotherapy treatment. Prevention issues.	2
10.	Trigeminal neuralgia. Neuropathy of trigeminal nerve and its branches. Iatrogenic trigeminal neuropathies. 1. Trigeminal neuralgia mainly of central genesis. Classical trigeminal neuralgia. 2. Postherpetic lesion of trigeminal nerve branches. 3. Trigeminal neuralgia mainly of peripheral genesis. Odontogenic trigeminal neuralgia 4. Nasal nerve neuralgia (Charlene's syndrome). 5. Neuralgia of the cervico-temporal nerve (Frey's syndrome). Etiology, pathogenesis, clinic, diagnosis, differential diagnosis, treatment.	2

	6. Neuropathy of buccal nerve 7. Neuropathy of lingual nerve (glossalgia). 8. Neuropathy of upper alveolar nerve. 9. Iatrogenic trigeminal neuropathies.	
11.	Facial nerve syndromes 1. Facial nerve neuropathy. 2. Geniculate ganglion syndrome (Hunt syndrome). 3. Neuralgia of Vidian nerve. Etiology, pathogenesis, clinic, treatment.	2
12.	Syndromes of glossopharyngeal, vagal and sublingual nerves. Glossodynia. 1. Neuralgia of glossopharyngeal nerve. 2. Eardrum nerve neuralgia (Reichert syndrome). 3. Ear nerve neuralgia. 4. Upper laryngeal nerve neuralgia. 5. Sublingual nerve neuralgia. 6. Glossodynia. Etiology, clinic, treatment.	2
13.	Autonomic prosopalgia. 1. Ciliary ganglionitis (Oppenheim syndrome). 2. Ganglionitis of sphenopalatine ganglion (Slyuder's syndrome). 3. Ganglionitis of oticum ganglion. 4. Mandibular and sublingual ganglionitis. 5. Cervical sympathetic ganglionitis. 6. Cluster headache. Etiology, clinic, treatment.	2
14.	Neurogenic diseases of face. Headache. Myofascial pain syndrome. 1. Etiology and mechanisms of headache: vascular, liquordynamic, neuralgic, tension-type, psychological, mixed. 2. Classification. Nosological forms of headache: migraine headaches, tension-type headache, cluster headache. Differential diagnostics, principles of treatment 3. Migraine etiology, mechanisms of pathogenesis. Clinical forms (simple migraine - without aura, associated), diagnosis, differentiated diagnosis, treatment principles (during the attack and inter-attacks period) 4. Headache due to intracranial hypotension syndrome and intracranial hypertension syndrome (etiopathogenetic factors, clinical and instrumental data) 5. Angioneurotic edema (Quincke edema). 6. Rossolimo-Melkerson-Rosenthal syndrome. 7. Sjogren's syndrome. 8. Progressive facial hemiotrophy (Parry-Romberg syndrome). Etiology, clinic, treatment. 9. Myofascial pain syndrome. Etiology, clinic, treatment.	2
15.	***Final modular control, including***	2
	TOTAL	**18**
	TOTAL number of hours of practical training of discipline	**30**

Self-directed work

Seq. No.	**Title of the topics** **Module 2 «Neurology, including neurostomatology»**	Number of hours
1	**Preparation for practical classes** - theoretical training and practical skills training	7
2	Preparation for final modular control	2
	Total	9

Individual tasks

1. Composition of tasks involving topical diagnostics; creation of pattern of cortical-muscular and sensitive path.
2. Creation of educational films.
3. Participation in interuniversity Olympiads.
4. Report at inter-departmental, inter-university, All-Ukrainian and international conferences and receiving prizes.

The list of theoretical questions for students' preparation for the final modular control and semester final attestation

Module 2 «Neurology including neurostomatology»

Content module 1. General neurology.

1. Olfactory nerve Anatomy, symptoms of lesions.
2. Optic nerve Anatomy, symptoms of lesion.
3. Oculomotor nerve Anatomy, symptoms of lesion.
4. Trochlear nerve. Anatomy, symptoms of lesion.
5. Abducens nerve. Anatomy, symptoms of lesion.
6. Trigeminal nerve. Anatomy, symptoms of lesion.
7. Facial nerve. Anatomy, differential diagnosis of central and peripheral paresis of facial muscles.
8. Cohleo-vestibular nerve. Anatomy, symptoms of lesion.
9. Differential diagnosis of bulbar and pseudobulbar syndrome.
10. Glossopharyngeal nerve Anatomy, symptoms of lesion.
11. Hypoglossal nerve Anatomy, symptoms of lesion.
12. Vagal nerve. Anatomy, nerve function.
13. Pyramidal system. Central motor neuron (cortico-spinal pathway). Symptoms of lesion.
14. Pyramidal system. Peripheral motor neuron (spino-muscular pathway). Symptoms of lesion.
15. Hypokinetic-hypertensive syndrome (Parkinsonism). Clinical signs.
16. Cerebellum. Anatomy. Symptoms of lesion, static and dynamic ataxia.
17. Hyperkinetic-hypotonic syndrome. Clinical signs.
18. Pathways of superficial sensation.
19. Pathways of deep sensation.
20. Medial loop formation.
21. Levels of sensitive pathways intersection.

22. Segmental-dissociated type of sensory impairment.
23. Alternating syndromes. Level of damage. Clinical manifestations.
24. Cortico-nuclear pathway. Anatomy. Symptoms of lesion.
25. Anatomy of supra-segmental departments of autonomic nervous system. Symptoms of lesion.
26. Anatomy of segmental departments of autonomic nervous system. Symptoms of irritation and insufficiency of parasympathetic cranial nerves (III, VIII, IX, X).

Content module 2. Special neurology. Neurostomatology.

1.Cerebrovascular disease. Classification.
2. Transient ischemic attacks. Definition, classification, etiology, clinic, diagnostics, treatment.
3. Ischemic stroke. Definition, classification, etiopathogenesis, clinic, diagnostics, treatment.
4.Hemorrhagic stroke. Definition, classification, etiology, clinic, diagnostics, treatment.
5.Chronic disorders of cerebral circulation. Definition, classification, etiology, clinic, diagnostics, treatment.
6. Meningitis. Definition, etiopathogenesis, classification, clinic, diagnostics.
7. Encephalitis. Definition, classification, clinic, diagnostics, treatment, prevention.
8. Acute disseminated encephalomyelitis. Etiology, pathogenesis, clinic, course, diagnosis, treatment.
9. Neuritis, neuropathy of the radial, elbow, middle nerves. Etiology, clinic, diagnostics, treatment.
10. Neuritis, neuropathy of the femoral, tibial, fibular nerves. Etiology, clinic, diagnostics, treatment.
11. Polyneuropathies: diphtheric, diabetic, alcoholic. Clinic, diagnosis, treatment.
12. Radiculitis, radiculopathy of cervical, lumbosacral roots. Etiology. Clinic. Treatment.
13. Trigeminal neuralgia. Etiology, pathogenesis, clinic, diagnosis, treatment.
14. Trigeminal neuropathy. Definition, etiology, clinical symptoms, principles of treatment.
15. Facial nerve neuropathy. Geniculate ganglion syndrome (Hunt Syndrome). Clinic, diagnosis, treatment.
16. Ciliary ganglionitis (Oppenheim syndrome). Definition, etiology, general clinical symptoms, principles of treatment.
17. Neuralgia of glossopharyngeal nerve. Definition, etiology, general clinical symptoms, principles of treatment.
18. Ganglionitis of sphenopalatine ganglion (Slyuder's syndrome). Definition, etiology, general clinical symptoms, principles of treatment.
19. Ganglionitis of the sublingual and mandibular ganglions. Definition, etiology, general clinical symptoms, principles of treatment
20. Glossodynia. Definition, etiology, general clinical symptoms, principles of treatment.

21. Rossolimo-Melkerson-Rosenthal syndrome. Definition, etiology, general clinical symptoms, principles of treatment.
22. Neuropathy of hypoglossal nerve. Definition, etiology, general clinical symptoms, principles of treatment.
23. Progressive facial hemiatrophy (Parry-Romberg syndrome). Definition, etiology, general clinical symptoms, treatment principles.

The list of practical skills required for the final modular control

1. Methodology of superficial and deep reflexes examination
2. Methodology of pathological flexor and extensor reflexes, subcortical oral reflexes examination.
3. Methods of detection of signs of peripheral and central paralysis.
4. Methods of detection of extrapyramidal disorders (hyperkinetic-hypotonic and hypokinetic-hypertonic syndromes).
5. Survey procedure of cerebellum functions. Checking of the coordination of movements, muscle tone, nystagmus.
6. Methods of detection of clinical syndromes (types) of sensitivity disorders (peripheral, segmental, conductive, spinal, cerebral, cortical).
7. The examination method of cranial nerves functions.
8. The examination method of the trigeminal nerve (sensitivity on the face, pain points, trigger zones, superciliary corneal, mandibular reflexes).
9. The examination method of the facial nerve (functions of facial muscles, taste sensitivity).
10. The examination method of the vestibular-cochlear nerve. Detection of auditory disorders (hyper-hypoacusia, Rinne's and Weber's tests).
11. Methods of detection of aphasias, apraxias, agnosias.
12. The examination method of the autonomic nervous system. Investigation of autonomic tone, autonomic reactivity (dermographism, Dagnini-Aschner's reflex test, ortho-clinostatic).
13. Study methodology of meningeal symptoms (Kernig's symptom, Brudzinski's symptoms, occipital muscle rigidity).
14. The lumbar puncture technique.
15. The evaluation of spondylograms, rheoencephalograms, EEG, CT scans.

The form of final control of academic performance – final modular control

The system of continuous and final control

The current control of educational activity is assessed on a traditional 4-point scale.
It has been used the standardized generalized criteria of knowledge estimation of higher education seekers in UMSA (table 1).

Table 1

Standardized generalized criteria of knowledge assessing of higher education seekers in UMSA

According to 4 point scale	According to ECTS	Evaluation criteria

5 (excellent)	A	Student shows special creative abilities, is able to acquire knowledge independently, without the help of the teacher finds and processes the necessary information, is able to use the acquired knowledge and skills for decision-making in unusual situations, convincingly argues answers, independently reveals own talents and inclinations, possesses not less than 90 % of knowledge on the topic both during the questioning and all types of control.
4 (good)	B	Student is fully oriented in the studied material, uses it in practice, freely solves exercises and problems in standardized situations, independently corrects errors, the number errors is insignificant, has at least 85% knowledge of the topic during the questioning, and all types of control .
	C	Student is able to compare, summarize, systematize information under the guidance of a scientific and pedagogical worker, in general, independently use it in practice, control their own activities; to correct mistakes, among which there are significant ones, to choose arguments to confirm opinions, has at least 75% of knowledge on the topic both during the questioning and all types of control.
3 (satisfactory)	D	Student reproduces a significant part of theoretical material, shows knowledge and understanding of the basic principals with the help of a teacher can analyze educational material, correct errors, among which there are a considerable number of significant, has at least 65% knowledge of the topic, and during the questioning, and all types of control.
	E	Student studied the educational material at a level higher than the initial, a significant part of it reproduces at the reproductive level, has at least 60% knowledge of the topic both during the questioning and all types of control.
2 (unsatisfactory)	FX	Student studied the material at the level of separate fragments that present a small part of the material, has less than 60% knowledge of the topic both during the questionong and all types of control.
	F	Student studied the material at the level of elementary recognition and reproduction of separate facts, elements, has less than 60% knowledge of the topic as during the questionong, and all types of control.

After completing the study of all topics of the module, the evaluation on traditional 4-point scale is converted into a multi-point (maximum 120 points) - the conversion of the total mark of current educational activity per module - is performed only after the class before final modular control. The conversion is performed according to the following algorithm:

- calculates the average mark of the higher education seeker on the traditional 4-point scale, obtained during the classes of this module (to the nearest hundredth point);

- to obtain a convertible multi-point total mark of the current educational activity per module, the average mark that was obtained on the traditional 4-point scale should be multiplied by a coefficient of 24, or according to Table 2. Exceptions are cases where the average mark on the traditional 4-point scale is 2 points. In this case, the higher education seeker has 0 points on a multi-point scale;

- the average mark of the current educational activity is calculated on the total number of classes in the module, but not on the actual number of attended classes.

Table 2

Unified table of correspondence of scores for current educational activity, scores for FMC, exam, and traditional four-point scale

Average mark for current educational activity (A)	Points for current educational activity on module (A * 24)	Points for FMC (A*16)	Points for module and / or exam (A*24 + A*16)	Category of ECTS	On 4 point scale
2	48	32	80	**F**	**2**
2,1	50	34	84	**FX**	**Unsatisfactory**
2,15	52	34	86		
2,2	53	35	88		
2,25	54	36	90		
2,3	55	37	92		
2,35	56	38	94		
2,4	58	38	96		
2,45	59	39	98		
2,5	60	40	100		
2,55	61	41	102		
2,6	62	42	104		
2,65	64	42	106		
2,7	65	43	108		
2,75	66	44	110		
2,8	67	45	112		
2,85	68	46	114		
2,9	70	46	116		
2,95	71	47	118		
3	72	50	122	**E**	**3**
3,05	73	50	123		**Satisfactory**
3,1	74	50	124		
3,15	76	50	126		
3,2	77	51	128		
3,25	78	52	130	**D**	
3,3	79	53	132		
3,35	80	54	134		
3,4	82	54	136		
3,45	83	55	138		
3,5	84	56	140		

3,55	85	57	142		
3,6	86	58	144	**C**	**4 Good**
3,65	88	58	146		
3,7	89	59	148		
3,75	90	60	150		
3,8	91	61	152		
3,85	92	62	154		
3,9	94	62	156		
3,95	95	63	158		
4	96	64	160	**B**	
4,05	97	65	162		
4,1	98	66	164		
4,15	100	66	166		
4,2	101	67	168		
4,25	102	68	170		
4,3	103	69	172		
4,35	104	70	174		
4,4	106	70	176		
4,45	107	71	178		
4,5	108	72	180	**A**	**5 Excellent**
4,55	109	73	182		
4,6	110	74	184		
4,65	112	74	186		
4,7	113	75	188		
4,75	114	76	190		
4,8	115	77	192		
4,85	116	78	194		
4,9	118	78	196		
4,95	119	79	198		
5	120	80	200		

The minimum convertible sum of points of current educational activity for all modules of all disciplines of all departments is uniform and is 72 points.

Final modular control on module 2 Neurology, incl. neurostomatology is performed upon completion of the study of all topics of the module at the last control class of the module.

Higher education seekers who have completed all types of work provided in the curriculum and scored not less than the minimum score (3.0 - 72 points) are admitted to the final control.

Higher education seekers who during the study of the module with final control, had an average score of current educational activity from 4.50 to 5.0 are exempt from FMC and automatically (by agreement) receive a final mark according to the table, however the presence of higher education seeker at FMC is mandatory. In case of disagreement with the assessment, this category of higher education seekers is performed FMC according to the general rules.

The final modular control is performed in a standardized way at the last class of the module and includes control of theoretical and practical training. Tickets for the

final modular control include 2 questions (25 points each-50 points), and 2 questions on practical skills (15 points - 30 points). Each ticket question is evaluated from 0 to 25 points, questions on practical skills from 0 to 15 points.

The FMC score is evaluated in points and is not converted into a traditional 4-point score. The maximum number of FMC points is 80 points. The minimum number of FMC points at which the control is considered completed is 50 points. The maximum number of points per module is 200 points (of which up to 120 points for current educational activity).

The result of the final modular control is evaluated in points (traditional 4-point evaluation is not given). The maximum number of points of the final modular control is 80 points. The minimum number of points of the final modular control, for which the control is considered to be passed, is 50 points. Tickets for the final modular control include 2 questions (25 points each-50 points), and 2 questions on practical skills (15 points - 30 points). Each ticket question is evaluated from 0 to 25 points, questions on practical skills from 0 to 15 points.

After the passing of final modular control, the total number of points per module is calculated:

a) the sum of points of current educational activity;

b) scores of the final modular control.

The maximum number of points per module is 200 points.

Information about FMC is filled in accordance with the regulations of organization of the educational process in UMSA and submitted to the dean's office.

Applicants for higher education who have not passed the FMC have the right to retake the module twice according to the reassignment schedule.

Teaching methods.

1. Verbal (lecture, explanation, story, conversation, instruction)
2. Visual (observation, illustration, demonstration)
3. Practical (practice for developing skills)
4. Self-directed work of students on comprehension and assimilation of new material
5. Thematic discussions
6. Brainstorming
7. Round table
8. Analysis of specific situations (case method)
9. Simulation tasks
10. Problem statement
11. Presentations
12. Trainings
13. Business games

Control methods - oral control, written control, test control, programmed control, practical examination, self-control, self-assessment.

Methodical support

1. Plans of lectures, practical classes and self-directed work of higher education seekers;
2. Methodical developments, theses, texts, multimedia presentations of lectures on discipline;

3. Guidelines for self-directed work of higher education seekers in practical classes, including material for theoretical training and indicative maps for mastering professional skills and abilities, tests for self-control in accordance with the topics of practical classes.
4. Methodical materials for self-directed work on topics submitted for independent study.
5. Theoretical questions and practical tasks to control the modules contents;
6. Materials for final modular controls;
7. Demonstration materials, instructions for the use of technical teaching aids (equipment for mastering theoretical material, educational films, videos).
8. Methodical recommendations for teachers for practical classes according to the thematic plan.

Recommended reading

Basic (available at the library of UMSA)

1. Neurology=Неврологія: textbook/I.A.Hryhorova, l.I. Sokolova, R.D.Herasymchuk et al. ; edited by I.A.Hryhorova, l.I. Sokolova.- Kyiv:AUS Medicina Publishing, 2017.- 624 p.
2. **Neurology** [Text] : textbook for students of higher med. institutions of IV level of accreditation / ed. by prof. L. Sokolova ; [contrib. L. Sokolova [et al.] . - Vinnytsia : Nova Knyha, 2012. - 280 p. : fig. - Бібліогр.: с. 267-268. - 900 прим. - **ISBN** 978-966-382-426-0

Supplementary

1. Brazis, PW. Masdeu, JC, Biller, J. **Localization in Clinical Neurology**
2.Glick, T. **Neurologic skills: examination and diagnosis**
3.Rowland, L. Merritt"s **Textbook of Neurology**
4.Adams, R. Victor, M. Ropper, **A. Principles of Neurology**
5.Biller J. **Practical Neurology**

Information resources

www.umsa.edu.ua
www.biblumsa.blogspot.com
https://en.wikipedia.org/wiki/Cerebellum
neuroscience.uth.tmc.edu/s3/chapter05.html
https://www.twirpx.com/file/1322569/
http://www.nsi.ua/
http://www.neuronet.ua/
http://www.stroke-center.gd/

Developers: Head of the Department of Nervous Diseases, Doctor of Medicine, Professor Mykhaylo DELVA, Doctor of Medicine. Docent Kateryna TARIANYK