PRIVATE HIGHER EDUCATIONAL INSTITUTION
"INTERNATIONAL ACADEMY OF ECOLOGY AND MEDICINE"
Department of Surgery

WORKING PROGRAM OF EDUCATIONAL DISCIPLINE

"NEUROLOGY"

LEVEL OF HIGHER EDUCATION Second (master's) level
DEGREE OF HIGHER EDUCATION Master's degree
BRANCH OF KNOWLEDGE 22 Healthcare
SPECIALTY 222 Medicine

Reviewed and approved
at the meeting of the department of surgery
Protocol No. 1, dated August 31 , 2022

Kyiv 2022

Working program of educational discipline Neurology for the preparation of students of higher education of the second (master's) level of higher education in specialty 222 Medicine.

Agreed

The first vice-rector _____ Oleksandra SOROKA

(signature) (initials and surname)

1. Description of the academic discipline

<table>
<tr><td rowspan="2">Name of indicators</td><td rowspan="2">Field of knowledge, direction of training, educational qualification level</td><td>Characteristic academic discipline</td></tr>
<tr><td>Full-time teaching</td></tr>
<tr><td rowspan="2">Number of credits 3</td><td>Branch of knowledge
22 "Health care"</td><td rowspan="2">Full course</td></tr>
<tr><td>Specialty :
222 "Medicine"</td></tr>
<tr><td>Modules 1</td><td rowspan="5">Qualifications of the educational "Master of Medicine"</td><td>A year of training</td></tr>
<tr><td>Content modules 2</td><td>IV</td></tr>
<tr><td>ECTS credits - 3.0</td><td>Semester</td></tr>
<tr><td rowspan="2">the total number of 90 hours</td><td>VIII</td></tr>
<tr><td>Lectures</td></tr>
<tr><td rowspan="10"></td><td rowspan="10">Form of education:
daytime

Type of discipline:
mandatory</td><td>10 hours</td></tr>
<tr><td>Practical</td></tr>
<tr><td>70 hours</td></tr>
<tr><td>Laboratory</td></tr>
<tr><td>-</td></tr>
<tr><td>Individual work</td></tr>
<tr><td>840 hours</td></tr>
<tr><td>Type of control:</td></tr>
<tr><td>Diff. settlement</td></tr>
</table>

The subject of study of the academic discipline is the regularity of the functioning of the nervous system and the peculiarities of the clinical manifestations of diseases of the nervous system.

Interdisciplinary connections: The working curriculum for the discipline "Neurology" is, in its content, a document that defines the amount of knowledge that students of the IU course must acquire in accordance with the requirements of the educational and qualification characteristics of the future specialist, the algorithm for studying the educational material of the discipline taking into account interdisciplinary connections ties

Neurology as an educational discipline: a) is based on students' study of medical biology, biological and bioorganic chemistry, histology, physiology and pathological physiology, human anatomy and pathological anatomy and is integrated with these disciplines; b) is based on students' study of propaedeutic disciplines of therapeutic profile, pharmacology, radiology and integrates with these disciplines; c) integrates with other clinical disciplines (internal medicine, neurosurgery, oncology, psychiatry, medical genetics, etc.); d) undergoes differentiation - the formation of separate areas of neurological science that have independent international organizations: - epileptology; cerebrovascular pathology; neuromuscular diseases; migraine and headache; parkinsonology; teaching about multiple sclerosis and demyelinating diseases; degenerative - dystrophic diseases of the brain .

2. Purpose and tasks of the study disciplines

2.1 The purpose of teaching the educational discipline **"Neurology"** is to improve knowledge about the peculiarities of the structure and functioning of various departments of the nervous system, to master the method of researching the neurological status, to study etiopathogenetic features, clinical manifestations, differential diagnostic signs, and modern directions and algorithms for the treatment of

various diseases of the nervous system systems.

2.2 The main tasks of studying the discipline **"Neurology"** is

- to improve knowledge about the anatomical and functional features and main syndromes of damage to the pyramidal, extrapyramidal, cerebellar, sensory systems, cranial nerves, integrative systems of the brain and the autonomic nervous system systems;
- to master the methodology of neurological research status;
- familiarize yourself with the main research methods in neurology (EEG, ultrasound of brain vessels , ENMG, evoked potentials, CT, MRI, etc.), their advantages and diagnostic opportunities;
- to learn to independently examine patients with neurological pathology with the compilation of medical history, establishment of topical and clinical neurological diagnoses;
- to study the etiology, pathogenetic features, clinical manifestations, diagnostic and differential diagnostic signs, modern directions and algorithms of treatment of various diseases of the nervous system.

2.3 Competencies and learning outcomes

General competences (CG)	
ZK-1	Ability to abstract thinking, analysis and synthesis.
ZK-2	Ability to learn and master modern knowledge.
ZK-3	Ability to apply knowledge in practical situations.
ZK-4	Knowledge and understanding of the subject area and understanding of professional activity.
ZK-5	Ability to adapt and act in a new situation.
ZK-6	Ability to make informed decisions.
ZK-7	Ability to work in a team.
ZK-8	Interpersonal skills.
ZK-10	Ability to communicate in a foreign language both orally and in writing.
ZK-11	Skills in using information and communication technologies.
ZK-12	Determination and persistence in relation to assigned tasks and assumed responsibilities.
Professional competences (FC)	
FC-1	Ability to collect medical information about the patient and analyze clinical data.
FC-2	Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results.
FC-3	Ability to establish a preliminary and clinical diagnosis of the disease.
FK-4	The ability to determine the necessary regime of work and rest in the treatment and prevention of diseases.
FC-5	The ability to determine the nature of nutrition in the treatment and prevention of diseases
FC-6	Ability to determine the principles and nature of treatment and prevention of diseases.
FC-7	Ability to diagnose emergency conditions.
FC-8	Ability to determine tactics and provide emergency medical care.
FC-10	Ability to perform medical manipulations.
FC-11	Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility.
FC-16	Ability to maintain medical documentation, including electronic forms.
FC-21	It is clear and unambiguous to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to people who are studying.
FC-24	Adherence to ethical principles when working with patients and laboratory animals
FC-25	Adherence to professional and academic integrity, to be responsible for the reliability of the obtained scientific results

Program Learning Outcomes (PLP)

PRN-1	Have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy.
PRN-3	Specialized conceptual knowledge, which includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine and related interdisciplinary problems.
PRN-4	Identify and identify leading clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, establish a preliminary clinical diagnosis of the disease (according to list 2).
PRN-5	Collect complaints, history of life and diseases, evaluate psychomotor and physical development of the patient, state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information regarding the diagnosis (according to list 4), taking into account the age of the patient.
PRN-6	Establish the final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of clinical, additional examination, differential diagnosis, observing the relevant ethical and legal norms, under the supervision of the head physician in the conditions of the health care institution (according to list 2).
PRN-7	Assign and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to list 4) of patients with diseases of organs and body systems for differential diagnosis of diseases (according to list 2).
PRN-8	Determine the main clinical syndrome or what causes the severity of the victim/victim's condition (according to list 3) by making a reasoned decision and assessing the person's condition under any circumstances (in the conditions of a health care facility, outside its boundaries), including in the conditions emergencies and hostilities, in field conditions, in conditions of lack of information and limited time.
PRN-9	Determine the nature and principles of treatment (conservative, operative) of patients with diseases (according to list 2), taking into account the age of the patient, in the conditions of a health care institution, outside its boundaries and at the stages of medical evacuation, including in field conditions, on on the basis of a previous clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes, in case of the need to expand the standard scheme, be able to justify personalized recommendations under the control of the head physician in the conditions of a medical institution.
PRN-10	Determine the necessary mode of work, rest and nutrition on the basis of the final clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes.
PRN-14	Determine tactics and provide emergency medical care in emergency situations (according to list 3) in limited time in accordance with existing clinical protocols and treatment standards.
PRN-17	Perform medical manipulations (according to list 5) in the conditions of a medical institution, at home or at work based on a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, observing the relevant ethical and legal norms.
PRN-18	To determine the state of functioning and limitations of a person's vital activities and the duration of incapacity for work with the preparation of relevant documents, in the conditions of a health care institution, based on data about the disease and its course, peculiarities of the person's professional activity, etc. Maintain medical documentation regarding the patient and population contingent based on regulatory documents.

PRN-21	Search for the necessary information in the professional literature and databases of other sources, analyze, evaluate and apply this information.
PRN-22	Apply modern digital technologies, specialized software, and statistical methods of data analysis to solve complex healthcare problems.
PRN-24	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.
PRN-25	It is clear and unambiguous to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists.
PRN-27	Communicate freely in the national and English languages, both orally and in writing to discuss professional activities, research and projects.

2.4 Information content of the training course disciplines

The program of the study discipline "Neurology" is represented by two sections "General Neurology" and "Special Neurology".

Chapter 1. General neurology.

Topic 1. Principles of the structure and functioning of the nervous system. The functional unit of the nervous system is a neuron. Motor system. Concept of reflex and reflex arc.

The main stages of phylo- and ontogenesis of the nervous system. Structural and functional unit of the nervous system. The main anatomical and topographic divisions of the nervous system: cerebral hemispheres, subcortical nodes, brain stem, spinal cord, roots, spinal ganglia, plexuses, peripheral nerves. The functional unit of the nervous system is a neuron. Types of neurons, their functional significance. Neuroglia, its functional significance. Autonomic nervous system, its suprasegmental and segmental divisions. Limbic-reticular complex. Cortex. Cytoarchitectonic fields. Localization of functions in the cortex of the large hemispheres. Concept of functional systems.

Blood supply of the brain and spinal cord. Shells of the brain and spinal cord. Cerebrospinal fluid. Concepts of reflex and reflex arc, conditioned and unconditioned reflexes, levels of closure of skin, tendon and periosteal reflexes. Anatomical features and neurophysiology of the system arbitrary movements, extrapyramidal system and cerebellum. Research methodology of the motor system.

Topic 2. Arbitrary movements and their violation. Pyramidal system. Kerkovo-nuclear and cortical-spinal tracts. Central and peripheral symptoms paresis

Implementation of arbitrary movements. Pyramid system. Central and peripheral motor neurons. Cortico-nuclear and cortico -spinal tracts. Symptoms of central (spastic) paralysis . Pathophysiology of muscle hypertension, hyperreflexia, pathological reflexes, decreased abdominal reflexes . Symptoms of peripheral (flabby) paralysis. Pathophysiology of atony, areflexia, atrophy. Paralysis, paresis, monoplegia, paraplegia, hemiplegia, triplegia, tetraplegia.

Topic 3. Syndromes of damage to the motor path at different levels. Cerebellum, syndromes of damage to the cerebellum .

Syndrome of motor disorders in the case of damage to the motor path at different levels: anterior central gyrus (syndromes of irritation and prolapse), radial crown, internal capsule, brain stem (alternating palsies), levels of the spinal cord (above the cervical thickening, at the level of the cervical thickening, thoracic , lumbar thickening, cone), different levels of the peripheral motor neuron (anterior horn, anterior root, nerve plexuses, separate peripheral nerve).

Extrapyramidal system and syndromes of its damage

Anatomical data: basal ganglia (lenticular, caudate nucleus, fence, subthalamus), formation of the brain stem (red nucleus, substantia nigra, reticular formation). Connections of subcortical ganglia with different parts of the brain and spinal cord. Physiology of the extrapyramidal system, its participation in ensuring unconditional reflexes, implementation of stereotyped automated movements, readiness of muscles for action. Biochemistry of the extrapyramidal system. Modern ideas about the exchange and concentration of catecholamines in the

nigrostriatal system . Syndromes of damage to the extrapyramidal system. Akinetic-rigid syndrome, or Parkinsonism syndrome, its biochemical aspects. Key clinical manifestations of parkinsonism: oligo-bradykinesia, muscle rigidity, parkinsonian tremor, postural instability.

Differential diagnosis of plastic and spastic (elastic) hypertension. Hyperkinetic syndrome. Types of hyperkinesis: athetosis, choreic, hemibalism, tics Muscular dystonias (focal (blepharospasm, facial hemispasm, spastic torticollis, oromandibular dystonia, hand dystonia, foot dystonia, torsion dystonia), segmental, generalized).

Anatomical and physiological features of the cerebellum. Cerebellar ligaments with different parts of the brain and spinal cord (homo- and heterolateral). Afferent and efferent ways. Cerebellum and cerebellar hemispheres . Functions of the cerebellum: ensuring balance, coordination, synergism of movements, regulation of muscle tone. Syndromes of damage to the cerebellum. Perceptions of static and locomotor ataxia, asynergy, muscle atony , intention tremor, adiadochokinesis, dysmetria, hypermetria, nystagmus, chanted speech. Types of ataxias: (cerebellar, cortical, vestibular, sensitive).

Topic 4. Sensitive system and symptoms of its damage. Types and types of sensitivity disorders. Practical skills.

Concept of reception. Types of receptors. Extroceptive, proprioceptive, interoceptive sensitivity. Clinical classification of sensitivity. Conductive pathways of sensitivity. Research methodology. Types of sensitive disorders: anesthesia, hypoesthesia, hyperesthesia, hyperpathy, dysesthesia. Synesthesia, dissociative disorders, polyesthesia, paresthesias. Pain and its classification. The concept of nociceptive and antinociceptive systems of the brain. Topical types of sensitive disorders: mononeuritic, polyneuritic, radicular, posterior horn, conductive (in case of damage to leading sensory pathways at the level of the spinal cord, medial loop, optic hump, internal capsule); cortical type (irritation and shedding syndromes). Syndrome of partial damage to the spinal cord, (Brown-Sécard syndrome).

Topic 5. Pathology of olfactory and visual analyzers. Syndromes of damage to the oculomotor nerves.

The first pair is the olfactory nerve (sensitive nerve): basic anatomical and physiological data.

Olfactory analyzer: the first neuron (ganglion cells of the mucous membrane of the nose); the second neuron (olfactory bulbs, olfactory pathway); third neuron (primary subcortical olfactory centers – olfactory triangle, transparent septum, anterior perforated substance); cortical olfactory center (medial surface of the temporal lobe of the brain). Research of the olfactory analyzer. Damage syndromes - hyposmia, anosmia, hyperosmia, olfactory hallucinations.

second pair is the optic nerve (sensory nerve).

Anatomical and physiological features: departments - peripheral (rods and cones, bipolar cells, ganglion cells, the nerve itself, chiasm, optic tract), central (lateral geniculate bodies, upper tubercles of the quadricollium, pillow of a healthy tubercle (subcortical centers), bundle of Graziole , spur groove of the occipital lobe (cortical center of the analyzer). Symptoms of damage: amaurosis, amblyopia, homonymous and heteronymous hemianopsia (binasal, bitemporal), visual hallucinations. Changes in the optic disc (changes in the fundus).

III, IV, VI pairs - oculomotor (mixed), block, abductor (motor) nerves: localization of nuclei, exit of roots from the skull, zone of innervation on the periphery.

Symptoms of damage: ptosis, strabismus, diplopia, violation of convergence and accommodation, ophthalmoplegia (partial and complete); pupillary reactions, reflex arc of the pupillary reflex, violation of pupillary reactions (Argyle-Robertson syndrome), miosis, mydriasis, anisocoria.

Topic 6 . Trigeminal, facial, parenchymal nerves and symptomstheir damage.

V pair - trigeminal nerve (mixed): nerve cores, root exit at the base of the brain, skull, nerve branches and their innervation zones (optic nerve, maxillary, mandibular nerves). Symptoms of damage to the trigeminal nerve system: damage to the branches of the trigeminal nerve (shooting pains, disorders of all kinds sensitivities in the innervation zone of the corresponding branches, loss of corneal reflex, paresis of masticatory muscles, loss of mandibular reflex); damage to the trigeminal nerve node (herpetic

rashes, pain, impaired sensitivity of all types on half of the face, decreased corneal and mandibular reflexes); damage to the sensitive nuclei of the trigeminal nerve - nuclei of the spinal cord (segmental - dissociated type of disturbance of pain and temperature sensitivity on half of the face); damage to the thalamus (hemianesthesia of all types of sensitivity, thalamic pains on the opposite side of the focus; damage to the cortex of the postcentral gyrus.

VII pair - facial nerve (mixed).

Anatomical and physiological features; component branches of the nerve (large stony nerve, stapes nerve, tympanic cord, facial nerve).

Symptoms of damage to the facial nerve: peripheral paresis of facial muscles (nerve damage in the canal, bridge-cerebral angle, brainstem (alternating bridge syndromes)) and central paresis of facial muscles (internal capsule; lower parts of the anterior central gyrus).

pair is the sphenoid nerve (sensitive).

Anatomical and physiological data, cochlear and vestibular nerves. Pathology of the cochleo-vestibular apparatus: damage to the sound-receiving apparatus (hearing disorder for high tones), damage to the sound-conducting apparatus (hearing disorder for low tones); damage to the temporal lobe (dizziness, nystagmus, impaired balance, coordination of movements, autonomic disorders, damage to the cortex of the temporal lobe (in case of irritation - auditory hallucinations).

Topic 7 . Pathology of IX–XII pairs of cranial nerves. Bulbar andpseudobulbar syndromes

IX pair – glossopharyngeal nerve (mixed); X pair – vagus nerve (mixed);

XI pair – additional nerve (motor); XII pair - hypoglossal nerve (motor).

Anatomo - physiological features. Localization of nuclei in the medulla oblongata. Bulbar and pseudobulbar syndromes: common signs (dysphagia, dysphonia, dysarthria) and differences (fibrillation and atrophy of tongue muscles, reflexes of oral automatism, forced laughter, crying). Disorders of innervation of the tongue muscles - peripheral and central paresis.

Pathology of the autonomic nervous system.

Anatomical and physiological features and functions of the autonomic nervous system: Segmental department of the autonomic nervous system. Sympathetic nervous system: lateral horns of the spinal cord brain, sympathetic trunk, ganglia. Parasympathetic nervous system: Craniobulbar, sacral (sacral) departments

Suprasegmental department of vegetative functions: hypothalamus, limbic system, reticular formation of the brain stem. Ergotropic and trophotropic activity. Methods of research of autonomic functions. Syndromes of damage to the suprasegmental department of the autonomic nervous system. Vegetative dystonia syndrome. Permanent and paroxysmal course. Hypothalamic syndrome.

Vegetative-vascular paroxysms: sympatho-adrenal, vago-insular, mixed. Syndrome of damage to the segmental autonomic nervous system. Damage to the brain stem , lateral horns of the spinal cord, ganglia of the border stem, plexuses, nerves. Claude-Bernard-Horner syndrome. Visceral symptoms. Levels of regulation of pelvic functions and their disorders

Topic 8. Localization of functions in the cerebral cortex . Injury syndromes. Cerebrospinal fluid, its changes. Meningeal syndrome.

Functional diagnosis of diseases of the nervous system. Structure of the large hemispheres of the brain . Cyto- and myeloarchitectonics of the cortex. Localization of functions in the cortex brain _ Dynamic localization of functions. Motor and sensory representations in the cortex. The concept of functional asymmetry of the hemispheres. Gnostic functions. Types of impaired gnostic functions: visual, olfactory, gustatory, auditory agnosia, astereognosis, autotopagnosia, anosognosia. Praxis. Types of apraxia: constructive, ideational, motor. Language. Speech disorders: motor, sensory, amnestic aphasia. Syndromes of damage to individual lobes of the large hemispheres: frontal, temporal, parietal, occipital lobes, limbic cortex. Syndromes of irritation of the cortex of the large hemispheres. Syndromes of damage to the right and left hemispheres. Concept of interhemispheric asymmetry. Chronic vegetative state syndrome. Syndrome of the "locked" patient. Brain death syndrome . Spinal cord puncture.

Shells of the brain and spinal cord. Physiology of CSF formation. The composition of the

cerebrospinal fluid is normal, its changes in meningitis, tumors, hemorrhagic stroke, tuberculosis. Cell-protein, protein-cell dissociation. Pleocytosis.

Meningeal symptoms: headache, vomiting, general hyperesthesia, photophobia, rigidity of the occipital muscles, Kernig's symptom, Brudzinsky 's symptoms (upper, middle, lower), trismus, local reactive pain phenomena of Mendel's s.m., Bekhtereva's zygomatic s.m., pain when pressing exit points small and large occipital nerves. Meningeal position of the patient. Lessage's symptom.

X-ray (cranio-, spondylography); Contrast x-ray examinations (myelography, angiography, ventriculography); Ultrasound (echoencephaloscopy, dopplerography). Electrophysiological (electroencephalography, rheoencephalography, echo-encephalopathy, electromyography, etc.); Methods of neuroimaging (computed tomography, magnetic resonance imaging, including vascular mode).

Practical skills.

Chapter 2. Special neurology.

Topic 9. Vascular diseases of the brain and spinal cord. Independent curation of medical history.

Classification. Acute disorders of cerebral blood circulation: strokes and transient disorders of cerebral blood circulation (transient ischemic attacks and cerebral hypertensive crises). Chronic disorders of cerebral circulation: early and late forms. Vascular dementia. Etiological factors and pathogenesis of acute brain disorders blood circulation

Hemorrhagic and ischemic (thrombotic and nonthrombotic) strokes, subarachnoid hemorrhages. Symptoms of damage to the anterior, middle, posterior cerebral arteries. Syndromes of occlusion and stenosis of the main vessels of the brain. Whole-brain and focal syndromes. Quantitative and qualitative types of disorders of consciousness (Productive and unproductive symptoms).

Differential diagnosis of various types of acute cerebral circulation disorders. Modern methods of undifferentiated and differentiated therapy of acute disorders of cerebral circulation. The "therapeutic window" period. Indications and contraindications for surgical treatment of disorders cerebral circulation. Hemorrhages in the spinal cord and its membranes. Ischemic spinal strokes. Etiology and pathogenesis. Semiology. Diagnostics. Intense therapy in the acute period. Treatment of patients in the period of residual phenomena after cerebral and spinal strokes. Rehabilitation and examination of able-bodied patients. Prevention of vascular diseases of the head and spine brain

Topic 10. Professional and domestic neurointoxication. Nervous system damage due to physical effectsfactors Neurological aspects of brain injury. Spinal injury.

Poisoning by industrial poisons of neurotropic action (lead, mercury, manganese, tetraethyl lead, arsenic, carbon monoxide, methyl alcohol, carbon disulfide, organophosphorus compounds). Clinic, neurological syndromes, treatment, prevention. Food poisoning, botulism. Korsak's syndrome and other neurological manifestations of alcoholism. Clinic of acute barbiturate poisoning. Emergency aid. Vibration disease, radiation damage, electrical nerve injury systems, influence permanent and variables fields, damage nervous systems with heat and sunstroke . Clinical picture, neurological syndromes, treatment, prevention.

Modern aspects of the classification of craniocerebral trauma. Brain concussion. Differential diagnosis of slaughter and compression of the brain. Intracranial hemorrhage. Complications of traumatic brain injury: post-traumatic encephalopathy, post-traumatic arachnoiditis, post-traumatic convulsive syndrome, post-traumatic asthenic syndrome. Chronic membrane hematomas (epi- and subdural). Emergency care for brain injury.

Spinal cord injury. Clinic, diagnosis, treatment. Peripheral injuries nerves

Topic 11. Epilepsy and non-epileptic paroxysmal states. Headache. Disturbance of sleep and alertness.

Epilepsy. The pathogenetic essence of the epileptic center in the development of the disease. The

value of endogenous and exogenous factors involved in the formation of this focus. Classification of epileptic seizures: generalized, partial and partial-generalized. Principles of differentiated treatment of epilepsy. Epileptic status (diagnosis, emergency care).

Non-epileptic paroxysmal conditions. Conditions with convulsions: spasmophilia, febrile convulsions, toxic convulsions, hysterical paroxysms. Conditions without convulsions: vegetative paroxysms, migraine, syncope. Differential diagnosis of epilepsy and non-epileptic paroxysmal conditions. Treatment of paroxysms and treatment in the interictal period.

Etiology and mechanisms of headache: vascular, fluid-dynamic, neuralgic, muscle tension, psychoalgic, mixed. Classification. Nosological forms of headache: migraine, muscle tension pain, cluster pain. Differential diagnosis, principles of treatment.

Migraine-etiology, modern mechanisms of pathogenesis. Clinical forms (simple migraine - without aura, associated), diagnosis, differential diagnosis, principles of treatment (during the attack and in the inter-attack period).

Headache in intracranial hypotension syndrome and intracranial hypertension syndrome (etiopathogenetic factors, subjective data, clinical and instrumental data).

Sleep disorders and states of alertness: stages of sleep, sleep disorders - presomnia, sleep disorders - insomnia, causative factors, treatment. Hypersomnias are pathological sleepiness. Sleep apnea syndrome. Treatment.

Topic 12. Meningitis. Arachnoidites. Encephalitis. Poliomyelitis. Acute myelitis. Amyotrophic lateral sclerosis.

Meningitis Classification of meningitis: primary and secondary, purulent and serous. Purulent meningitis. Primary meningococcal meningitis, clinic, diagnosis,
course features, atypical forms. Secondary meningitis: pneumococcal, staphylococcal. Clinic, diagnostics, indicators of cerebrospinal fluid, treatment, prevention.

Serous meningitis. Primary viral: lymphocytic choriomeningitis, enterovirus meningitis (ESNO, Coxsackie), mumps and others. Secondary: tuberculous meningitis and meningitis due to other infections. Clinic, diagnosis, significance of cerebrospinal fluid examination in differential diagnosis, treatment, prevention.

Arachnoidites. Etiology, pathogenesis. Pathomorphology: adhesive, cystic. Classification by localization: arachnoiditis of the posterior cranial fossa, basal, convexity. Clinic, course, diagnosis. Differential diagnosis. Treatment and prevention. Encephalitis. Classification. Primary encephalitis: epidemic, tick-borne spring-summer, herpetic. Secondary encephalitis: rheumatic (small chorea), post-vaccinal, with chicken pox. come on, sweethearts. Clinic, course, forms of the disease, diagnosis.

Damage to the nervous system during influenza (influenza hemorrhagic encephalitis, encephalopathy). Infectious encephalopathy - dyscirculatory and dystrophic changes of the brain without pronounced focal lesions with a predominance in the clinic of asthenic manifestations, vegetative dystonia, intracranial hypertension. Course, diagnosis, differential diagnosis, treatment, prevention.

Poliomyelitis. Etiology, pathogenesis, epidemiology, ways of spreading. Pathomorphology. Clinical classification: paralytic (abortive, subclinical) and paralytic forms (pre-paralytic and paralytic stages) and trunk forms. Diagnosis, differential diagnosis. The value of virological and serological studies in the diagnosis of the disease. Treatment in the acute and recovery period. Consequences. Prevention.

Poliomyelitis-like diseases in children caused by Coxsackie and ESNO viruses, mumps, herpes simplex adenoviruses. Clinical forms, course, prognosis, diagnosis, treatment, prevention.

Acute myelitis. Etiology (in primary myelitis – neuroviruses, tuberculosis, syphilis; in secondary – as a complication of infectious diseases – measles, scarlet fever, typhus, pneumonia, influenza or in the case of suppuration). Pathogenesis. Pathomorphology. Clinic and clinical forms (symptom complex of spinal cord damage in lumbar, thoracic departments, at the level of cervical thickening, in the upper cervical region). Blood diagnostics. Differential diagnosis. Treatment.

lateral sclerosis. Etiology (exitoxic damage to peripheral neurons and central motoneurons as a result of increased function glutamate receptors). Pathogenesis. Pathomorphology. Clinic and clinical forms (bulbar, cervical-thoracic, lumbar-sacral). Differential diagnosis. Treatment with antiglutamate

drugs).

Topic 13. Neurosyphilis. Neurological manifestations of polymyositis-dermatomyositis. Damage to the nervous system in the presence of HIV infection. Tuberculosis of the nervous system. Demyelinating diseases of the nervous system.

Neurosyphilis. Early neurosyphilis (mesodermal): generalized syphilitic meningitis, meningovascular syphilis, gum of the brain and spinal cord, latent asymptomatic meningitis (liquor syphilis).

Late neurosyphilis (parenchymal): spinal tuberculosis, progressive paralysis. Diagnosis, methods of treatment.

Neurological disorders of polymyositis-dermatomyositis: etiology, pathogenesis, clinical manifestations (skeletal muscle damage syndrome, myofascial pain syndrome, myotonic syndrome, Raynaud's syndrome); neurological disorders (CNS lesions, autonomic disorders, hypothalamic dysfunction, tunnel neuropathies), additional e x a m i n a t i o n methods , differential diagnosis, treatment, prevention. T

NeuroAIDS. Etiology, pathogenesis, key clinical manifestations: dementia, acute meningocephalitis and atypical aseptic meningitis, myelopathy, damage to the peripheral nervous system.

Damage to the nervous system associated with infections that develop on the background of immunodeficiency, caused by toxoplasmosis, herpes simplex virus, cytomegalovirus infection, papovavirus, fungi (cryptococci, candidiasis). Tumors of the central nervous system in AIDS: primary lymphoma, Kaposi 's sarcoma. Disorders of cerebral circulation in patients with AIDS. Diagnosis of neurological manifestations of AIDS. Treatment. Forecast. Prevention.

Tuberculosis of the nervous system. Tuberculous meningitis (clinic, course, cerebrospinal fluid data). Tuberculous spondylitis, solitary tuberculomas of the brain. Diagnostics, modern methods of treatment, prevention.

Acute diffuse encephalomyelitis. Multiple sclerosis. Modern theory of pathogenesis (autoimmune disease, genetic predisposition). Pathomorphology (numerous foci of demyelination in the brain and spinal cord). Early symptoms. The main clinical forms (cerebral: stem, cerebellar, optic, hyperkinetic, spinal, cerebrospinal). Charcot's triad. Pentad of Mamburg. Forms of the course of the disease. Differential diagnosis. Treatment (in the period of exacerbation - exchange plasmapheresis, pulse therapy with corticosteroids, cytostatics, desensitizing therapy, antihistamines, antioxidants; in the period of remission - interferons - drugs that improve the trophic state of the nervous system, vascular drugs.

Subacute sclerosing panencephalitis. Leukodystrophies: metachromatic, globoid cell, sudanophilic, express diagnostic methods.

Topic 14. Parasitic diseases of the nervous system, prions infections, neuroborreliosis. Diseases of the peripheral nervous system

Cysticercosis, echinococcosis. Toxoplasmosis. Ways of infection. Clinic. Diagnosis, treatment, prevention. Prion infections. Creutzfeldt-Jakob disease (etiology, pathogenesis, clinic, diagnosis, prevention).

Neuroberreliosis (Lyme disease, tick-borne borreliosis) - ways of infection, clinical and epidemiological data, tick-borne erythema migrans, prevention, laboratory diagnosis, treatment (antibiotics-tetracyclines, penicillins, cephalosporins of the 3rd generation), prevention.

Clinical classification of diseases of the peripheral nervous system. Vertebrogenic lesions of the peripheral nervous system.

Cervical level: reflex syndromes (cervicago, cervicalgia; cervicocranialgia or posterior vertebral artery syndrome and cervicobrachialgia with myotonic, vegetative-vascular or neuro-dystrophic manifestations). Root syndromes (discogenic lesions of the roots of radiculopathy). Root-vascular syndromes (radiculo-ischemia).

Chest level; reflex syndromes (thoracago, thoracalgia with myotonic vegetative-visceral or neurodystrophic manifestations).

Root syndromes (discogenic root lesions - radiculopathy). Lumbar-sacral level: reflex syndromes

(lumbago, lumbago, lumbagoischalgia with myotonic, vegetative-vascular or neurodystrophic manifestations). Root syndromes (discogenic root lesions - radicopathies). Root-vascular syndromes (radiculo-ischemia). Damage to the cranial nerves. Neuralgia of the trigeminal and other cranial nerves. Neuropathy of the facial nerve, neuropathy of other cranial nerves.

Damage to individual spinal nerves. Traumatic neuropathies. On the upper limbs: radial, ulnar, median, skin-muscular and other nerves. On the lower limbs: femoral, buttock, fibula, tibia and others.

Plexopathy. Injuries of plexuses: cervical, upper shoulder (Erb-Duchenne palsy); lower humerus (Dezherin-Klumpke palsy); shoulder (total); lumbosacral (partial or total).

Compression-ischemic mononeuropathies (most often tunnel syndromes). On the upper limbs: carpal tunnel syndrome (median nerve); Hien's canal syndrome (ulnar nerve). On the lower limbs: tarsal canal syndrome (fibular nerve); paresthetic Meralgia Rota-Bernhard (pinch under the Poupart's ligament of the lateral cutaneous nerve of the thigh).

Multiple lesions of nerve roots.

Infectious polyneuropathies, infectious-allergic polyradiculoneuropathy (Landry, Hyena-Barre).

Polyneuropathies. Toxic: with chronic household or industrial intoxication (alcohol, lead, chlorophos, and others); with toxic infections (diphtheria, botulism); allergic (medicated and others); dysmetabolic: hypo- or vitamin deficiency, with endocrine diseases – diabetes, liver, kidney diseases, etc.; dyscirculatory: with nodular periarteritis, rheumatic and other vasculitis, idiopathic and hereditary forms.

Treatment of diseases of the peripheral nervous system: medicinal, orthopedic, surgical, sanatorium-resort. Treatment with physical education. Issues of prevention and examination.

Topic 15. Perinatal lesions of the nervous system. Somatoneurological syndromes. Hereditary and degenerative diseases of the nervous system. Congenital defects of the spine and spinal cord. Syringomyelia

Etiological factors (intrauterine, birth trauma, brain damage in the early postpartum period). Hypoxic-ischemic encephalopathy (acute period, recovery period). Children's cerebral palsy, clinical forms - spastic, hemiplegic, ataxic, quadriplegic, hyperkinetic. Diagnostics. Treatment (drug, non-medicinal). Prevention.

Somatoneurological syndromes that arise as a result of disturbances in the metabolism of the nervous system, hypoxia, pathological reflex impulses in human somatic diseases . The most common somato-neurological syndromes are: asthenic, vegetative dystonia, polyneuropathic, neuromuscular disorders. Somato-neurological syndromes in diseases of the lungs, heart, blood system, digestive tract, liver, kidneys, endocrine system, collagenoses. Paraneoplastic syndrome. Treatment. Prevention.

Modern principles of classification. Neuromuscular diseases. Progressive muscular dystrophies. Myopathies: pseudohypertrophic Duchenne, juvenile Erba-Rota, shoulder-scapular-facial Landousy-Dezherin; amyotrophies: spinal Werdnig-Hoffman, spinal Kugelberg-Welander, neural Charcot-Marie.

Myotonia. Thomson myotonia congenita . Rossolimo-Steinerg-Kurschmann dystrophic myotonia. Myasthenia. Myasthenic syndromes.

Paroxysmal myoplegia. Syndrome of paroxysmal myoplegia. Extrapyramidal degeneration. Hepatocerebral degeneration is a disease

Konovalov-Wilson syndrome: pathogenesis, clinical syndromes, diagnosis, treatment). Huntington's disease (pathogenesis, leading clinical syndromes, diagnosis, treatment). Modern biochemical aspects of Parkinson's disease and its treatment.

Muscular dystonias (primary hereditary, secondary due to organic brain diseases), etiology, principles of treatment. Spinocerebellar ataxias. Friedreich's hereditary ataxia. Hereditary spinocerebellar ataxias. Pyramidal degeneration. Hereditary spastic paraplegia (Strümpel's disease). Principles of treatment.

Craniovertebral anomalies: Klippel-Weil, Arnold-Chiarri syndrome.

Underdevelopment of the spinal cord. Spinal hernias.

Syringomyelia - etiology, pathogenesis, pathomorphology, clinical forms, main clinical syndromes (affects of the posterior horn, anterior and lateral horns, syndromes of damage to the

conducting pathways of the white matter of the lateral and posterior columns of the spinal cord, dysraphic spatus). Diagnostic criteria. Differential diagnosis. Principles of therapy.

3. The structure of the study disciplines

Topic	Lectures	Practical (seminar) classes	SRS	Individual a work
Section of discipline 1 "General neurology"				
Topic 1. Concept of reflex and reflex arc. Pathological reflexes, research methodology.	-	**4**	**2**	
Topic 2. Voluntary movements and their disorders. Pyramid system. Cortico-nuclear and cortico-spinal pathways. Symptoms of central and peripheral paresis, pathogenesis of symptoms.	**2**	**4**	**2**	
Topic 3. Symptom complexes of movement disorders in the case of damage to different levels of the cortico- muscular pathway. Extrapyramidal system and syndromes of its damage. Cerebellum. Syndromes of damage to the cerebellum. Types of ataxia.	**2**	**4**	**2**	
Topic 4. Sensitive system and symptoms of its damage. Types and types of sensitivity disorders. Practical skills.	-	**4**	**1**	
Topic 5. Pathology of olfactory and visual analyzers. Syndromes of damage to the oculomotor nerves.	-	**4**	**1**	
Topic 6. Trigeminal, facial, parenchymal nerves and syndromes of their damage.	-	**4**	**1**	
Topic 7. Pathology of IX-XII pairs of cranial nerves. Bulbar and pseudobulbar syndromes. Anatomical and physiological data, pathology and research methodology of the autonomic nervous system.	-	**4**	**1**	
Topic 8. Anatomical and physiological data, research methodology of cortical functions. Syndromes of damage and irritation of the bark. Violation of higher brain functions. Blood diagnostics. Meningeal syndrome. Functional diagnosis of diseases of the nervous system	-	**4**	**1**	
Section of discipline 2 "Special neurology"				

Topic 9. Independent curation with compilation of medical history. Vascular diseases of the brain and spinal cord. Transitory ischemic attacks.	**2**	**4**	**1**	Compilation of "Step-2" tasks, preparation of reports for scientific conferences, participation in inter-university conferences
Topic 10. Professional and household neurotoxicity. Damage nervous system under the influence of physical factors Neurological aspects of brain injury. Spinal injury	**-**	**4**	**1**	
Topic 11. Epilepsy and non-epileptic paroxysmal conditions	**2**	**4**	**1**	
Topic 12. Meningitis. Encephalitis. Arachnoiditis Poliomyelitis. Acute myelitis. Neurosyphilis. Neurological manifestations of polymyositis-dermatomyositis. Amyotrophic lateral sclerosis. Demyelinating diseases.	**-**	**3**	**1**	
Topic 13. Damage to the nervous system in the presence of HIV infection. Tuberculosis of the nervous system. Neuroberreliosis. Parasitic diseases nervous system, prion infections.	**-**	**3**	**1**	
Topic 14. Diseases of the peripheral nervous system.	**2**	**3**	**2**	
Topic 15. Perinatal lesions of the nervous system. Congenital defects of the spine and spinal cord. Syringomyelia. Hereditary-degenerative diseases of the nervous system.	**-**	**3**	**2**	
Differential calculation		**4**		
That's all	**10**	**60**	**20**	

4. Thematic plan lectures

No. z.p.	TOPIC	Number of hours
1.	Voluntary movements and their disorders. Pyramid system. Cortical-nuclear and cortical-spinal pathways. Bulbar and pseudobulbar paralysis. Alternating syndromes.	2
2.	Anatomical and physiological data, pathology vegetative nervous systems. Cerebral cortex . Disorders of higher brain functions (aphasia, agnosia, apraxia).	2
3.	Vascular diseases of the brain and spinal cord. Transient ischemic attacks.	2

4.	Epilepsy and non-epileptic paroxysmal states.	2
5.	Amyotrophic lateral sclerosis. Demyelinating diseases of the nervous system. Myasthenia. Parkinson's disease. Diseases of the peripheral nervous system.	2
	In total	***10***

5. Thematic plan of practical classes

No. z.p.	**TOPIC**	**Number of hours**
1.	Principles of the structure and functioning of the nervous system. The functional unit of the nervous system is a neuron. Motor system. Ideas about reflex and reflex arc	4
2.	Arbitrary movements and their violation. Pyramidal system. Kerkovo-nuclear and cortical-spinal tracts. Central and peripheral symptoms paresis	4
3.	Syndromes of damage to the motor path at different levels. Cerebellum, syndromes of damage to the cerebellum.	4
4.	Sensitive system and symptoms of its damage. Types and types of sensitivity disorders. Practical skills	4
5.	Pathology of olfactory and visual analyzers. Syndromes of damage to the oculomotor nerves.	4
6.	Trigeminal, facial, parenchymal nerves and syndromes of their damage.	4
7.	Pathology of IX-XII pairs of cranial nerves. Bulbar and pseudobulbar syndromes. Anatomical and physiological data, pathology and methods of research of the autonomic nervous system.	4
8.	Localization of functions in the cerebral cortex . Injury syndromes. Cerebrospinal fluid, its changes. Meningeal syndrome. Practical skills	4
9.	Independent curation with compilation of medical history. Vascular diseases of the brain and spinal cord. Transient ischemic attacks	4
10.	Professional and household neurointoxication. Damage nervous system under the influence of physical factors Neurological aspects of brain injury. Spinal injury	4
11.	Epilepsy and non-epileptic paroxysmal states	4
12.	Meningitis Encephalitis. Arachnoiditis Poliomyelitis. Acute myelitis. Neurosyphilis. Neurological manifestations of polymyositis-dermatomyositis. Amyotrophic lateral sclerosis. Demyelinating diseases	3
thirteen.	Damage to the nervous system in the presence of HIV infection. Tuberculosis of the nervous system. Neuroberreliosis. Parasitic diseases of the nervous system, prion infections.	3
14.	Diseases of the peripheral nervous system.	3
15.	Perinatal lesions of the nervous system. Congenital defects of the spine and spinal cord. Syringomyelia. Hereditary-degenerative diseases of the nervous system.	3
	Differential calculation	***4***
	In total	***6 0***

6. Thematic plan of independent work students

No. z.p.	Topic	Number of hours	type of control
1.	The main stages of the development of neurological science. Principles of the structure and functioning of the nervous system. Functional unit of the nervous system. Clinical classification of sensitivity. Anatomy of sensitive pathways. Research methodology . Types and types of sensitive disorders (symptom complexes of sensitive disorders with damage to different levels of sensitive pathways).	1	Current control on practical classes
2.	Concept of reflex and reflex arc. Pathological reflexes, research methodology.	1	Current control on practical classes
3.	Voluntary movements and their disorders. Pyramid system. Cortical-nuclear and cortical-spinal pathways. Symptoms of central and peripheral paresis, pathogenesis of symptoms.	1	Current control on practical classes
4.	Symptocomplexes of movement disorders when affected by various levels cortico-muscular pathway.	1	Current control on practical classes
5.	Extrapyramidal system and syndromes its damage.	1	Current control on practical classes
6.	Cerebellum. Syndromes of damage to the cerebellum. Types of ataxia.	1	Current control on practical classes
8.	Pathology of olfactory and visual analyzers. Syndromes of damage to the oculomotor nerves.	1	Current control on practical classes
9.	Trigeminal, facial, parenchymal nerves and their syndromes damage	1	Current control on practical classes
10.	Pathology of IX-XII pairs of cranial nerves. Bulbar and pseudobulbar syndromes	1	Current control on practical classes
11.	Anatomical and physiological data, pathology and methods of vegetative research nervous system.	1	Current control on practical classes
12.	Anatomical and physiological data, research methodology cortical functions. Damage and irritation syndromes bark Violations of higher brain functions (aphasia, agnosia, apraxia, etc.) others).	1	Current control on practical classes
thirteen.	Blood diagnostics. Meningeal syndrome. Functional diagnosis of nervous diseases systems.	1	Current control on practical classes
14.	Headache. Sleep disturbance.	1	Current control on practical classes
15.	Vascular diseases of the brain and spinal cord. Transient ischemic attacks.	1	Current control on practical classes
16.	Epilepsy and non-epileptic paroxysmal states.	1	Current control on practical classes

17.	Professional and household neurointoxication. Damage to the nervous system under the influence of physical factors.	1	Current control on practical classes
18.	Neurological aspects brain injury. Spinal injury.	1	Current control on practical classes
19.	Meningitis Encephalitis. Arachnoidites	1	Current control on practical classes
20	Poliomyelitis. Acute myelitis. Neurosyphilis. Neurological manifestations of polymyositis-dermatomyositis.	1	Current control on practical classes
In total		2 0	

7. Individual tasks

Individual tasks are one of the forms of organization of education at the university, which aims to deepen, generalize and consolidate the knowledge that students receive in the process of learning, as well as the application of this knowledge in practice. Individual tasks are performed by students independently under the guidance of the teacher.

Individual tasks include: writing abstracts and creating multimedia presentations with reports at meetings of the department's scientific student circle, participation in the department's scientific and research work, participation in writing theses and articles for reports at student scientific conferences.

8. Teaching methods

According to the sources of knowledge, teaching methods are used: verbal - story, explanation, lecture, instruction; visual - demonstration, illustration; practical - practical work, problem solving. According to the nature of the logic of knowledge, methods are used: analytical, synthetic, analytical-synthetic, inductive, deductive. According to the level of independent mental activity, the following methods are used: problem-based, searching, research.

1. Verbal methods: lecture, conversation;
2. Visual methods: illustration, demonstration, demonstration at the patient's bedside;
3. Practical methods: performing practical work and solving clinical situational tasks to develop skills and abilities; simulation training.
4. Students' independent work on understanding and assimilation of new material
5. Use of control and educational computer programs
6. Innovative teaching methods: Case-based learning (learning through the analysis of a clinical case, situation); brain storm; educational discussion; educational debates; role play; team-based learning; think-pair-share.

Types of training classes according to the curriculum are: lectures, practical classes; independent work of acquirers.

9. Control methods

Current control is carried out on the basis of control theoretical knowledge, practical skills and abilities.

Forms of current control are: *in the* dream survey (frontal, individual, combined), interview; **practical verification of the formed professional skills** (carried out based on the results of solving clinical cases, working with medical documentation, performing practical skills, working at the patient's bedside); **test control** ("open" and "closed" test tasks).

Current control is mandatory. During the evaluation of mastering of each topic from all disciplines of the curriculum for the current educational activity, the student is given grades on a 4-point (traditional scale) taking into account the approved evaluation criteria for the discipline. All types of work provided by the curriculum are taken into account. The student must receive a grade in each topic. The teacher

conducts a survey of each student in the group at each lesson and assigns a grade in the journal of attendance and student performance according to the traditional scale ("5", "4", "3", "2").

When evaluating the student's current educational activity, 20% of the grade is the student's independent work, which takes into account the knowledge of the topic of independent study and the performance of work in the notebook.

The final (summary) control is carried out :

- in the form of a written test, which includes test tasks, theoretical questions
- control of practical skills (solving clinical cases, defense of medical history, assessment of the correctness of practical skills - practical-oriented exam.

According to the specifics of professional training, preference is given to test and practically oriented control.

Differential assessment is a form of final control of the student's assimilation of theoretical and practical material from the academic discipline.

10. Scheme of accrual and distribution of points received by students.

The maximum number of points for a discipline is 200 points. The ratio between the results of the evaluation of the current educational activity and the final control of knowledge is 60% and 40%.

The study of the discipline ends with a final control in the form of a differential assessment.

Only those students who do not have academic debt (all missed classes have been completed) and whose average score for the current educational activity in the academic discipline is at least "3" are admitted to the differential credit.

The maximum number of points that a student can score for the current educational activity for admission to the differential credit is 120 points and is defined as the sum of the arithmetic average of all grades received in the semester.

The minimum number of points that a student must score for the current educational activity is 72 points. Recalculation of the average grade for the current academic performance (on a 120-point scale) in the table. 1.

Table 1.

Recalculation of the average grade for the current academic performance in a multi-point scale for disciplines ending with a differential credit

4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale
5	120	4.29	103	3.58	86
4.96	119	4.25	102	3.54	85
4.92	118	4.21	101	3.50	84
4.87	117	4.17	100	3.46	83
4.83	116	4.12	99	3.42	82
4.79	115	4.08	98	3.37	81
4.75	114	4.04	97	3.33	80
4.71	113	4.00	96	3.29	79
4.67	112	3.96	95	3.25	78
4.62	111	3.92	94	3.21	77
4.58	110	3.87	93	3.17	76
4.54	109	3.83	92	3.12	75
4.50	108	3.79	91	3.08	74
4.46	107	3.75	90	3.04	73
4.42	106	3.71	89	3	72
4.37	105	3.67	88	Less than 3	Not enough
4.33	104	3.62	87		

The maximum number of points that a student can score when taking a differential assessment is 80 (the minimum number is at least 50).

Discipline assessment is defined comprehensively as the sum of points for the current educational activity and points for differential assessment.

From the allocated 120 points for the current educational activity, 4 to 12 additional points are allocated for the assessment of individual independent work of higher education applicants, according to the work curriculum. Encouragement points are added to the final grade for the discipline at the end of its study.

Points with disciplines for students, which successfully completed the program are converted into the national scale and ECTS system (Table 2).

Table 2

Scale assessment: national and ECTS

Total pointsfor all typeseducational activity	RatingECTS	Rating by national scale	
		for exam, diploma	for offset
180-200	A	perfectly	counted
160-179	B	okay	
150-159	C		
130-149	D	satisfactorily	
120-129	E		
50-119	FX	unsatisfactorily with the possibility of refolding	not counted with possibility rearrangement
0-49	F	unsatisfactorily with mandatoryrepeated studying the discipline	not counted with mandatory repeated studying the discipline

11. METHODOLOGICAL SECURITY

1. Working curriculum of the discipline;
2. Plans of lectures, practical classes and independent work of students;
3. Abstracts of lectures on the discipline;
4. Methodical instructions for practical classes for students;
5. Methodical materials that ensure independent work of students;
6. Test and control tasks for practical classes;
7. List of exam questions

List of questions submitted for differential assessment

General neurology.

1. Receptorics, sensitivity. Clinical classification sensitivity
2. Conductive path of surface and deep species sensitivity
3. Types of sensitivity disorders, pain and its varieties
4. Types of sensitivity disorders (classification).
5. Visual hump, symptoms damage
6. Syndrome Brown-Secara.
7. Types of sensitivity disorders (classification).
8. Characteristics of the peripheral type of disorders sensitivity
9. Characteristics of the spinal type of disorders sensitivity

10. Characteristics of the cerebral type of disorders sensitivity
11. Shells of the brain and spinal cord, meningeal syndrome.
Clinic of meningeal syndrome.
12. Reflex apparatus of the spinal cord. Reflex, reflex arc. unconditional reflexes
13. Tendon and periosteal reflexes, their arcs locking
14. Pyramidal path (cortico-spinal highway).
15. Cortico - nuclear highway.
16. Cortico-spinal and cortico-nuclear ways
17. Central paralysis, conditions of occurrence, signs
18. Central (spastic) paralysis.
19. Peripheral paralysis, conditions of occurrence, signs
20. Symptoms of damage to the anterior horn, anterior root, peripheral nerve.
21. Peripheral (flabby) paralysis. Pathogenesis of atony, areflexia, atrophy
22. Syndromes of transverse damage of the spinal cord at the level of cervical thickening.
23.Syndromes of transverse lesions of the spinal cord at the level of the thoracic region .
24. Internal capsule, symptoms of damage.
25. Extrapyramidal system (structure, function).
26. Syndromes of damage to the pallidary system (syndrome parkinsonism).
27. Parkinsonism syndrome, biochemical mechanisms development
28. Syndromes of damage to the striatal system (types of hyperkinesis).
Types of hyperkinesis.
29. Cerebellum, anatomical and physiological features, syndromes damage
30. Types of ataxia.
31. Types of pathological walk
32. Symptoms of damage to the visual analyzer (nerve, optic tract, bark).
33. Signs of damage to the first branch of the trigeminal nerve nerve
34. Signs of damage to the II trigeminal branch nerve
35. Signs of damage to the III branch of the trigeminal nerve nerve
oculomotor damage nerve
37. Symptoms of abductor and block lesions nerves
38. Signs of peripheral and central facial paralysis muscles
39. Signs of peripheral and central muscle paralysis tongue
40. Bulbar paralysis and pseudobulbar paralysis paralysis
41. Signs of bulbar paralysis
42. Alternating syndromes (definition, examples).
43. Weber alternating syndrome.
44. Alternating paralysis. Brain peduncle damage syndromes .
45. Alternating paralysis. Varolia lesion syndromes bridge
46. Fovilla alternating syndrome.
47. Claude-Bernard Horner syndrome.
48. Miyar-Gubler alternating syndrome.
49. Jackson alternating syndrome.
50. Symptoms of damage to the autonomic nervous system (sympathicotonia, vagotonia).
51. Suprasegmental department of the autonomic nervous system, function, syndromes damage
52. Segmental department vegetative nervous systems, function, damage syndromes.
53. Claude-Bernard Horner syndrome.
54. Cortex of the large hemispheres, syndromes damage
55. Symptoms of damage to the cortex of the parietal lobe brain
56. Symptoms of damage to the cortex of the frontal lobe brain
57. Symptoms of damage to the cortex of the temporal lobe brain
58. Symptoms of damage to the cortex of the occipital lobe brain
59. Speech disorders (dysarthia, aphasia).

60. Types of aphasias.
61. Agnosia, aphasia.
62. Cerebrospinal fluid in norms
63. Cerebrospinal fluid formation, composition of cerebrospinal fluid in norms
64. Blood supply of the head and back brain

Special neurology .

1. Classification of nervous vascular diseasessystems.
2. Ischemic stroke (etiology, pathogenesis, classification).
3. Ischemic stroke (clinic, diagnosis, treatment).
4. Transient ischemic attacks (clinic, treatment).
5. Hemorrhagic stroke (parenchymal and subarachnoid hemorrhage).
6. Hemorrhagic stroke (etiology, pathogenesis, clinic, treatment).
7. Subarachnoid hemorrhage (etiology, clinic, diagnostics).
8. Hemorrhagic parenchymal stroke (clinic, diagnosis, treatment).
9. Prevention strokes
10. Principles undifferentiated and differentiated treatment of strokes.
11. Cephalgia-pathogenetic mechanisms appear clinic, diagnosis, treatment.
12. Migraine: pathogenesis, clinic, treatment.
13. Insomnia, hypersomnia
14. Epilepsy (classification episeizures).
15. Epilepsy (definition, diagnosis, principles treatment).
16. Phases of generalized tonic-clonic epileptic seizure
17. Epileptic status, urgent help.
18. Meningitis, classification.
19. Meningitis (primary, secondary).
20. Encephalitis (primary, secondary).
21. Epidemic encephalitis, acute clinic stage
22. Epidemic encephalitis, clinic of chronic stage
23. Herpetic encephalitis..
24. Acute infectious myelitis.
25. Poliomyelitis, etiology, clinic, diagnosis.
26. Tuberculosis of the nervous system systems.
27. Meningitis, classification. Meningococcal meningitis.
28. Damage to the nervous system in AIDS (neuro-AIDS).
29. Multiple sclerosis (course options, clinic, modern methods of treatment).
30. Acute diffuse encephalomyelitis.
31. Neurosyphilis, early and late forms
32. Neuroborreliosis.
33. Lateral amyotrophic sclerosis.
34. Neuralgia trigeminal nerve (etiology, clinic, treatment).
35. Neuropathy of the facial nerve (Bell's palsy) - clinic, treatment.
36. Diabetic polyneuropathy (etiology, clinic, treatment).
37. Alcoholic polyneuropathy (clinical diagnosis and treatment).
38. Diphtheria polyneuritis - etiology, clinic, complication.
39. Neuropathy of the radial nerve .
40. Vertebrogenic lumbar-sacral radiculoneuropathy.
41. Neurological manifestations of osteochondrosis of the spine (pain syndromes).
42. Shoulder plexites (upper - Duchenne - Erba).
43. Shoulder plexites (lower - Dezherina – Klumpke).
44. Ulnar and median neuropathy nerves
45. Guillain's acute polyradiculoneuropathy - Barre.

46. Peroneal and tibial neuropathy nerves
47. Root syndromes of the cervical, lumbar localization.
48. Epilepsy (classification episeizures).
49. Epilepsy (definition, diagnosis, principles treatment).
50. Phases of generalized tonic-clonic epileptic seizure
51. Epileptic status, urgent help.
52. Syringomyelia, syringobulbia (etiopathogenesis, diagnosis, clinic, prognosis).
53. Children's cerebral palsy, clinical options, treatment.
54. Closed craniocerebral injury - concussion brain
55. Closed craniocerebral injury - contusion of the head brain
56. Closed craniocerebral injury - compression of the brain .
57. Progressive muscular dystrophy
58. Myasthenia. Myasthenic syndromes.
59. Neural amyotrophy Charcot-Marie.
60. Familial spastic paralysis Strympel.
61. Spinocerebellar ataxias. Hereditary ataxia Friedrich
62. Cerebellar ataxia Pierre-Marie.
63. Familial ataxia Friedrich
64. Modern biochemical aspects of Parkinson's disease and its treatment.
65. Hepatocerebral dystrophy (Konovalov 's disease -Wilson).
66. Chorea Huntington.
67. Somatoneurological syndromes in cardiovascular diseases
68. Somatoneurological syndromes in diseases liver, pancreas, kidneys.

3. Practical skills that can be applied to the differential credit in neurology.

-Methodology of examination of physiological reflexes, their arcs locking.

- Methods of examination of voluntary movements (active, passive movements, muscle tone, muscle strength, Barre exercises and Buddha).

- Methods of examination of pathological reflexes of oral automatism.

- Methods of examination of pathological feet reflexes

-Checking muscle tone, its changes, characterizing the syndromes for which these changes are characteristic.

- Cerebellar examination methodology functions.

-Methodology for examining the function of the strio-pallidary system (gait, active movements, muscle tone, speech, handwriting).

-Method examination symptoms tension spinal cord roots, symptom name

-Speech disorders, specify the syndromes for which the specified are characteristic changes

-Methodology of olfactory and gustatory examination analyzers.

-Methodology of visual examination analyzer.

-Methodology of examination of trigeminal function nerve

- Methodology of examination of oculomotor function nerves

-Methodology of examination of facial function nerve

-Methodology of examination of the function of the bulbar group of nerves (IX, X, XII pairs of cranial nerves nerves).

- Describe the technique of meningeal examination symptoms

- Rate it somatovegetative reflexes (Ashner-Danigna, Danielopolo 's clinostatic reflex, Prevel's orthostatic reflex), skin autonomic reflexes, pilomotor sympathetic reflex.

-Assess autonomic innervation eye

- Describe the presented changes in visual fields (name of the syndrome, topic of the lesion).

- Describe picture eye the bottom at different pathological conditions (neuritis, congestive discs of ZN, atrophy DZN).

-Describe the method of performing a lumbar puncture.

-Indications and contraindications for lumbar puncturepunctures are possible complication.

- Describe the presented samples of the analysis of the cerebrospinal fluid, for which pathology they are characteristic

- Changes in the cerebrospinal fluid in subarachnoid hemorrhage, multiple sclerosis, purulent and serous meningitis, neurotuberculosis, Guillain-Barré syndrome.

EEG - diagnostic value of the method, indications for conducting. Name and describe the changes on the EEG at epilepsy

- Describe the changes in the presented electroencephalograms of patients with epilepsy (absence, focal seizures, generalized seizures, epistatus).

Electroneuromyography (EMG) – physical principles, interpretation and diagnostic value of the method, indication.

- Describe presented electroneuromyograms (BASS, myotonia, myasthenia, polyneuropathy).

- Computed tomography of the brain (CT) - physical principles, diagnostic value in of neurology

-Evaluate the presented samples of computer tomography of patients (cerebral infarction, hemorrhagic stroke, traumatic brain injury, subarachnoid hemorrhage).

MRI - physical principles, diagnostic value in of neurology.

- Describe the changes in the presented MRI of the brain and spinal cord of patients with multiple sclerosis (modes, characteristics hearth).

-Evaluate the presented MRI samples of neurological patients (multiple sclerosis, acute cerebrovascular accident, acute diffuse encephalomyelitis, neurosynde)

Ultrasound of the main vessels of the head and neck - physical principles, diagnostic value in neurology, indication.

-Indicate the main X-ray signs of osteochondrosis on the ones presented spondylograms.

ray research methods in neurology (craniography, spondylography, angiography) - physical principles, diagnostic value, indications.

-Com scale Glasgow.

12. Recommended literature:

Basic

1. Neurology: textbook / I. A. Grigorova, L. I. Sokolova, R. D. Gerasimchuk and others. - 3rd edition. processing and additional - K.: Medicine, 2020. - 640 p.

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