

Federal State Autonomic Educational Institution of Higher Education
«Peoples' Friendship University of Russia»

Medical Institute

Recommended MCSD

SYLLABUS
(STUDY GUIDE)

Subject

Neurology, Medical Genetics, Neurosurgery

Recommended for the direction of training (specialty)

31.05.01 General Medicine

Program (profile, specialization)

General Medicine

1. Goals and objectives of study:

The goal of study: is to provide students with the basic knowledge and skills in clinical neurology and neurosurgery regarding semiotics, topical diagnosis, nosology, paraclinical tests, diagnostics and differential diagnostics, treatment and prevention of the most common disorders of the nervous system.

Objectives:

- To acquire the knowledge in the basic tools of neurologic diagnosis (obtain an accurate neurologic history, and elicit neurologic complaints, perform neurologic examination, the utility and appropriate use of paraclinical examinations: blood and urine tests, ECC, Doppler ultrasound, EEG, MRI, CT, EEG, EMG and CSF evaluations)
- The ability to manage neurological emergencies including status epilepticus, acute stroke, syncope etc.
- The ability to perform a differential diagnosis between neurologic diseases
- Know the list of medications most commonly used in neurological practice, their indications, contraindications, side and adverse effects.
- To learn about the principles of management of neurological disorders. Treatment strategies for main types of neurological diseases.
- Review and interpret the medical literature (including electronic databases), preparation of reports, essays, bibliography and reviews on the subject of research in neurology and neurosurgery.
- Explore organisation and daily work of neurological and neurosurgical clinic, learn about management of disability examinations in neurological disorders.

2. Discipline as a part of the curriculum:

Discipline «neurology, neurosurgery, medical genetics » is studied during 7th-8th semesters and refers to the disciplines of the specialization of higher professional medical education: it is a part of a professional cycle of disciplines according to the profile “General Medicine”.

Table 1 presents the following and subsequent disciplines aimed at the formation of discipline competencies in accordance with the competence matrix.

Table 1

Prior and subsequent disciplines aimed at the formation of competencies

N	Universal Competence Code and Name	Prior disciplines	Subsequent disciplines
Universal Competences (UK)			
	UC-1.	Biology; Anatomy, Pathological Anatomy, Pathophysiology, Clinical Pathophysiology;	Infectious diseases, Hospital therapy, Traumatology and orthopedics
General Professional Competences (GPC)			

	GPC-5	Normal physiology	Infectious diseases, Hospital therapy, Traumatology and orthopedics
	GPC-7	Microbiology, Virology, Medical Enzymology, Introduction to Nutrition	Infectious diseases, Hospital therapy, Traumatology and orthopedics
Professional Competences (PC)			
	PC-1	Biology; Microbiology, Virology, Medical Enzymology, Introduction to Nutrition; Topographic anatomy, operative surgery; Immunology; Pathophysiology, Clinical Pathophysiology; Dermatovenereology; Neurology, medical genetics, neurosurgery; Occupational diseases; General surgery; Obstetrics and gynecology	Outpatient therapy; Hospital, pediatric surgery; Urology; Oncology, radiation therapy
	PC-2	Biology; Microbiology, Virology, Medical Enzymology, Introduction to Nutrition; Topographic anatomy, operative surgery; Immunology; Pathophysiology, Clinical Pathophysiology; Dermatovenereology; Neurology, medical genetics, neurosurgery; Occupational diseases; General surgery; Obstetrics and gynecology	Outpatient therapy; Hospital, pediatric surgery; Urology; Oncology, radiation therapy
	PC-3	Pathological anatomy; Topographic anatomy, operative surgery; Neurology, medical genetics, neurosurgery; Ophthalmology; Otorhinolaryngology; Faculty therapy; General and Faculty Surgery; Urology; Dentistry ;Traumatology and Orthopedics; Phthisiology; Obstetrics and gynecology.	Emergency Medicine; Hospital therapy, Oncology Topical issues of neonatology.

3. Requirements for the results of mastering the discipline

The process of studying the discipline is aimed at the formation of the following competencies:

Formed competencies

N	Competences Code and Name	Competences Name	Competence Achievement Indicator
	UC-1.	UC-1. Being able to implement critical analysis of problem situations based on systems approach, develop an action strategy	UC-1.1. Analysing scientific and technical literature and regulatory documents of medical institutions. UC-1.2. Assessing in a critical way the reliability of information sources, working with contradictory information from different sources.
	GPC-4.	GPC-4. Being able to use medical devices provided for by the procedure for medical care, and conduct patient examinations in order to determine a diagnosis	GPC-4.1. Being able to use medical devices in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on the provision of medical care, care taking into account the medical care standards. GPC-4.2. Being able to assess the effectiveness and safety of medical devices.
	GPC-5.	GPC-5. Being able to assess morpho-functional, physiological conditions and pathological processes in the human body to solve professional tasks	GPC-5.1. Mastering the algorithm of clinical, laboratory and functional diagnosis when dealing with professional tasks. GPC-5.2. Being able to evaluate the results of clinical, laboratory and functional diagnosis when dealing with professional tasks. GPC-5.3. Being able to determine morpho-functional, physiological states and pathological processes of the human body.
	GPC-7	GPC-7. Being able to prescribe treatment and monitor its efficacy and safety	GPC-7.1. Mastering skills in the methods of general clinical examination, interpretation of laboratory results, instrumental diagnostic methods. GPC-7.2. Being aware of the algorithm for making a preliminary diagnosis with the subsequent referral of the patient to the relevant medical specialist.
	PC-1	PC-1. Being able to provide emergency or urgent medical care to a patient	PC-1.1. Being able to assess the condition of a patient who needs emergency or urgent medical care. PC-1.2. Being able to recognize conditions that arise from sudden acute diseases, exacerbation of chronic diseases with-

			<p>out obvious signs of a threat to the patient's life and which require emergency medical care.</p> <p>PC-1.3. Being able to provide emergency medical care to patients with sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life.</p> <p>PC-1.4. Being able to recognize conditions which pose a threat to the patient's life, including conditions of clinical death (cessation of the vital bodily functions (blood circulation and/or respiration) which require emergency medical care.</p> <p>PC-1.5. Being able to provide emergency medical care to patients in conditions which pose a threat to the patient's life, including clinical death (cessation of the vital bodily functions (blood circulation and/or respiration).</p> <p>PC-1.6. Being able to use drugs and medical devices when providing medical care in emergency or urgent forms.</p>
	PC-2	PC-2. Being able to examine a patient in order to determine a diagnosis	<p>PC-2.1. Mastering the skills to collect complaints, anamnesis of the patient's life and disease, as well as conduct a complete physical examination of the patient (examination, palpation, percussion, auscultation).</p> <p>PC-2.2. Being able to make a preliminary diagnosis and make up a plan of laboratory and instrumental examinations of a patient.</p> <p>PC-2.3. Being able to refer a patient to a laboratory examination in case there are medical indications in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on the provision of medical care taking into account the medical care standards.</p> <p>PC-2.7. Being able to carry out differential diagnosis with other diseases/conditions, including the urgent ones, as well as to make a diagnosis taking into</p>

			account the current international statistical classification of diseases and problems related to health (ICD).
	PC-3	PC-3. Being able to prescribe treatment and monitor its efficacy and safety	<p>PC-3.1. Being able to develop a treatment plan for a disease or condition taking into account the diagnosis, age and clinical picture in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on the provision of medical care taking into account the standards of medical care.</p> <p>PC-3.2. Being able to prescribe medicinal drugs, medical devices and medical nutrition taking into account the diagnosis, age and clinical picture of the disease and in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on the provision of medical care taking into account the standards of medical care.</p> <p>PC-3.3. Being able to prescribe non-drug treatment taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on the provision of medical care taking into account the standards of medical care.</p> <p>PC-3.4. Being able to assess the efficacy and safety of the use of drugs, medical devices, medical nutrition and other treatment methods.</p> <p>efficacy and safety of treatment.</p>

According to discipline requirements student must:

Know:

- Anatomy and physiology of human nervous system.
- Basic clinical investigation methods for neurological patients
- Main symptoms and syndromes of nervous system lesions
- Etiology, pathogenesis, clinical characteristics and diagnosis of major neurological diseases;
- Principles of management of neurological emergencies.

- Interpretation of common laboratory tests and and distinguish normal from abnormal findings.
- Basics of medical ethics and deontology.
- Present medical case history (documenting complete neurology exam, and documenting diagnostic considerations, evaluation plan, and differential diagnosis).
- Perform a complete case history of neurological patient.
- The main groups of drugs used in neurology and their indications.
- Differential Diagnosis in Neurologic Disease
- Prevention of neurological disease

Be able to:

- obtain an accurate neurologic history, and elicit neurologic complaints, collect anamnesis vitae and morbi.
- perform detailed neurologic examination, and distinguish normal from abnormal findings.
- provide appropriate paraclinical investigation plan
- review and evaluate laboratory and diagnostic testing for patients on the neurology service. (cerebrospinal fluid, radiography,CT and MRI , electroencephalography ,electromyography, Doppler ultrasound)
- Independently examine the patient, formulate clinical diagnosis, differential diagnosis, make decision about appropriate diagnostic studies, prescribe treatment and determine prognosis of the most common neurological diseases. Manage neurological emergencies.
- Provide indications for appropriate specialist consultation (general practitioner, cardiologist, neurosurgeon, psychiatrist etc).
- prepare a clear written presentation of a patient's case history.
- Formulate the basics of neurological disease preventions
- Solve deontological cases related to the collected patient history, diagnostic symptoms and syndromes.
- Review and interpret the medical, scientific literature. Perform literature searches on a specific topic
- Use computers and the internet.

To master:

- Obtain an accurate neurologic history, and elicit neurologic complaints
- the ability to perform a focused and reliable neurologic examination
- 3) interpretation of paraclinical tests used in diagnosing neurologic disease
- diagnostic algorithm for neurological disorder (especially for critical neurological disease)
- the management of critical neurological emergencies.

4. The structure and content of the discipline

The total subject complexity _____6_____ credits.

№	Academic work	Total hours	Semesters			
			7	8		
1.	Classroom training (total)	158	68	90		
	Including:	-	-	-	-	-
1.1.	Lectures		17	15		
1.2.	Other classes					
	Including:					
1.2.1	Practical classes (PC)					
1.2.2.	Seminars (S)					
1.2.3.	Laboratory work (LW)					
	Total in interactive Forms (IF)	126	51	75		
2.	Self study (total)	58				
	Including:	-	-	-	-	-
2.1.	Course project (work)					
2.2.	Calculation and graphical work					
2.3.	Abstract					
2.4.	midterm certification					
	Other types of self -study					
3.	The total complexity (hours)					
	The total complexity (credits)	216				

5. Discipline description

5.1. Sectional contents of the discipline

№ п/п	Name of section	Section contents
1.	Propaedeutic of neurology 1. The general concept of the nervous system. Movement and its disorders. Examinations of motor function: muscle bulk, tone, strength, posture, gait, tendon and periosteal reflexes, clonus, pathological flexor and extensor reflexes, protective reflexes, synkinesis	Learning objective: Be able to: 1. Use methods for examining the active movements; muscle strength; muscle tone; tendon, cutaneous, mucosal and periosteal reflexes. 2. Use methods for examining the coordination of movements (Romberg's test, gait examination (with open and closed eyes), finger-nose test, heel to shin test, diadochokinesis, Schilder's test, Babinski's asynergy.) Know: 1. Anatomy and physiology of the central and peripheral motor neurons. 2. Signs of central and peripheral paralysis. 3. Symptoms due to damage of motor analyzers at different levels: cortex; white matter of the cerebral hemispheres; internal capsule; brainstem; anterior horn, anterior roots and peripheral nerves of cervical, thoracic and lumbar

					ing in IF		
1.	. Examinations of motor function: muscle bulk, tone ,strength, posture, gait, tendon and perios-teal reflexes,clonuses, pathological flexor and extensor reflexes, protective reflexes, synkine-sis	2	4		1,5	3	10,5
2.	Cranial nerve examination: III, IV,V,VI, VII, IX, X, XI, XII.Lesions syndromes.	2	4		1,3	2,5	9,8
3	Examination of the Sensory system (exterocep-tion, proprioception). Types of sensory disor-ders. Examination of sign in radiculitis and meningeal signs. Anatomical localization of sensory deficits. Types of pain syndromes.	2	4		1,2	4	11,2
4.	Examination of special senses (vision,smell, taste and hearing) and their disorders		4		1,0	2	7
5.	Methods for the assessment of aphasia, apraxia and agnosia.	2	4		1,5	2	9,5
6.	Examination of motor coordination. Cerebellar ataxia, vestibular ataxia, sensory ataxia. Exam-ination of extrapyramidal system. Extrapyram-idal signs and symptoms.	2	4		1,5	4	11,5
7.	Review and examination of the autonomic nervous system (ANS)		4		0,5	1,5	6
8.	Brain lesion syndromes, spinal cord lesion syn-dromes. Symptoms in lesion of: Cerebral cor-tex, white matter of the brain, internal capsule and basal ganglia, brain stem. Spinal cord. Pe-ripheral nerves.		4		1,5		5,5
9.	Somatoneurologic and neurosomatologic syndromes.		4		1,5	4	9,5
10.	Paraclinical methods of investigations: EEG,EMG, CT,MRI,evoked potentials, dopper ultrasound		4		1,5	4	9,5
11.	Neurosurgery. Introduction to neurosurgery.Methods of exam-inations and investigations in Neurosurgery.		4		1,5		5,5
12.	Central nervous systems tumors	2	4		1	9	14
13.	Cerebrovascular disease in neurosurgical prac-tice.		4		1,5		5,5
14.	Craniocerebral injuries	2	4		1		5
15.	Vascular disease of brain and spinal cord. Clas-sification , clinical features of stroke and chronic cerebrovascular insufficiency.	2	4		2	6	14

16.	Vascular disease of brain and spinal cord. Diagnosis.Treatment. Prevention.	2	4		2	5	13	
17.	Infectious and parasitic disease of the central nervous system. Treatment and prevention.	2	4		2	8	16	
18.	Peripheral nervous system disorders. Treatment and prevention.	2	4		2	4	12	
19.	Chronic and chronic,progressive neurological disease: Amyothrophic lateral sclerosis – ALS, Myasthenia Gravis, syringomyelia.	2	4		2		8	
20.	Hereditary degenerative diseases of the nervous system. Chromosomal disorders. Genetic disorders.	2	4		1,5	6	13,5	
21.	Demyelinating disorders of the nervous system.	2	4		2		8	
22.	Autonomic nervous system disorders. Neurosis.		4		0,5	4	8,5	
23.	Epilepsy and seizure disorders. Syncope.	2	4		2	4	12	
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5.4. Interactive session descriptions.

№ п/п	Section №	Topic for practical sessions (seminars)	Type of class	The complexity (hrs.)
№ п/п 1.	Voluntary Movement and movement disorders	Examinations of motor function: muscle bulk, tone ,strength, posture, gait, tendon and periosteal reflexes,clonus, pathological flexor and extensor reflexes, protective reflexes, synkinesis	Slide-presentation provided by professor	1,5
2.	Cranial nerves.	Examination of cranial nerves (motor nerves): III, IV,V,VI, VII, IX, X, XI, XII. Their lesion syndromes.	Creative assignment (slide-presentation provided by students).	1,3
3.	Sensory system	Examination of the Sensory sytem(exteroception, proprioception). Types of sensory disorders.Examination of sign in radiculitis and meningeal signs. Anatomical localiztion of sensory deficits. Types of pain syndromes.	Case study workshop	1,2
4.	Special senses.	Examination of special senses(vision,smell, taste and hearing) and their disorders	Creative assignment.	1,0

5	Higher Cortical Function.	Methods for the assessment of aphasia, apraxia and agnosia.	Case study.	1,5
6	Cerebellum. Extrapyramidal system.	Examination of motor coordination. Cerebellar ataxia, vestibular ataxia, sensory ataxia. Examination of extrapyramidal system. Extrapyramidal signs and symptoms.	Case study workshop.	1,5
7	Autonomic nervous system.	Examination of autonomic nervous system.	Slide-presentations provided by professor.	0,5
8	Brain lesion syndromes. Spinal cord lesion syndromes.	Brain lesion syndromes, spinal cord lesion syndromes. Symptoms in lesion of: Cerebral cortex, white matter of the brain, internal capsule and basal ganglia, brain stem. Spinal cord. Peripheral nerves.	Medical cases.	1,5
9	Somatoneurologic and neurosomatologic syndromes.	Somatoform autonomic disfunction, Acute and chronic encephalopathy, syndromes of myelopathy, acute myelopathy or cauda equine syndrome, epilepsy syndrome, radicular syndrome, polyneuropathy, syncope syndromes.	interactive dialog.	1,5
10	Paraclinical methods of investigations	EEG, EMG, CT, MRI, evoked potentials, doppler ultrasound	colloquium	1,5
11	Neurosurgery. Introduction to neurosurgery. Methods of examinations and investigations in Neurosurgery.	Neurosurgery definition. Neurologic disease and disorders treated by neurosurgeons. Invasive investigations in neurosurgery. Lumbar puncture technique, evaluation of CSF pressure and CSF composition. Interpretation of results. Cerebrospinal fluid dynamic tests, technique, indications, interpretation of results. Suboccipital puncture technique, indications, interpretation of results, major complications. Myelography, technique, types of myelograms, contrast substances that can be used for a myelogram, clinical indications interpretation of results, major complications. Lateral ventricular punc-	Professor's Slide-presentations, interpretation of various para-clinical tests	1,5

		<p>ture technique,</p> <p>clinical indications interpretation of results, major complications. Cerebral angiography technique, clinical indications interpretation of results, major complications.</p> <p>Non-invasive investigations in neurosurgery. Diagnostic criteria and possibilities of paraclinical investigations– craniography, spondilography, CT, MRI doppler ultrasound, EEG.</p>		
12	Central nervous system tumors.	<p>Topographical and morphological classification of central nervous system tumors, Classification of gliomas. Epidemiology of central nervous system tumors, their pathogenesis and clinical manifestation. Clinical features of different types of CNS tumors</p> <p>Diagnostic criteria and possibilities of paraclinical investigations– craniography, spondilography, CT, MRI doppler ultrasound, EEG, myelography, lumbar puncture.</p> <p>The differential diagnosis of central nervous system tumors and other neurologic disorders.</p> <p>Management of central nervous system tumors in adult patients. CNS tumors treatment options (combined therapy options).</p> <p>Indications for neurosurgical treatment of CNS tumors in adult patients.</p> <p>Types of neurological surgery of various CNS tumors. Treatment, prognosis and rehabilitation.</p>	Master Class	1,0
13	Cerebrovascular diseases in neurosurgery.	<p>Classification of cerebrovascular diseases (neurosurgery treats) (arteriovenous malformation, brain aneurysm, intracranial or subarachnoid hemorrhage, stroke). Etiology, pathogenesis, epidemiology of cerebrovascular dis-</p>	Professor's slide-presentations. Cases.	1,5

		<p>ease.</p> <p>Clinical features of cerebrovascular disease. Clinical features of different types of brain aneurysm and subarachnoid hemorrhage.</p> <p>Clinical features of different types of arteriovenous malformations and subarachnoid hemorrhage. Clinical features of carotid-cavernous sinus fistula.</p>		
14	Craniocerebral injuries	<p>Classification of craniocerebral injuries. Assessment of level of consciousness in patients with craniocerebral injuries. Overview of coma and impaired consciousness. Glasgow coma scale.</p> <p>Etiology, pathogenesis, epidemiology closed head injuries. Clinical features of different form of craniocerebral injuries.</p> <p>Types and diagnostic criteria of brain herniations.</p> <p>Paraclinical investigations: craniography, spondylography, CT,MRI doppler ultrasound, EEG,myelography, lumbar puncture.</p> <p>Diagnostic criteria and differential diagnosis of craniocerebral injury. Traumatic brain injury: neurologic and somatic complications.</p> <p>Traumatic brain injury: treatment and management, indications for neurosurgery. Types of neurosurgical treatment.</p> <p>Prevention and rehabilitation.</p>	Round- table discussion. Cases.	1,0
15	Vascular diseases of the brain and spinal cord. Classification , clinical features of stroke and chronic cerebrovascular insufficiency.	<p>Classification of vascular diseases of the brain and spinal cord.</p> <p>Etiology, pathogenesis, epidemiology of cerebrovascular diseases.</p> <p>Clinical features of chronic cerebrovascular diseases. Clinical features of ischemic stroke: thrombotic and embolic.</p> <p>Clinical features of hemorrhagic stroke and subarachnoid hemorrhage.</p>	Professor's Slide-presentations. Grand rounds.	2,0

		Clinical features of spinal cord infarction. Diagnostic criteria and indications of paraclinical investigations– craniography, spondylography, CT, MRI doppler ultrasound, EEG, lumbar puncture.		
16	Vascular diseases of the brain and spinal cord.	Stroke differential diagnosis, neurologic and somatic complications. Medical management of vascular disease of brain and spinal cord. Stroke treatment options. Vascular diseases of the brain and spinal cord: prevention and rehabilitation.	Medical cases.	2,0
17	Infectious and parasitic disease of the central nervous system. Treatment and prevention.	Nosological forms of disease (bacterial, viral and tuberculous meningitis, arachnoiditis, tick-borne, autoimmune and viral encephalitis, poliomyelitis, encephalomyelitis, neurobrucellosis, neurosyphilis). Etiology of the most common routes of transmission, epidemiology, pathogenesis, clinical features, diagnosis, treatment and prevention (including vaccination) of infectious diseases of the central nervous system. Laboratory tests for infectious diseases of central nervous system: CSF tests, CSF microscopy, inoculation of CSF samples, serological tests, immunofluorescent tests, indications and contraindications. Diagnostic criteria and possibilities of paraclinical investigations–MRI, radioisotope scanning, angiography, ophthalmoscopy. Emergency management of infectious disease – coma, convulsive seizure, acute respiratory and cardiac failure, toxic shock syndrome.	Round- table discussion. Cases.	2,0
18	Peripheral nervous system disorders. Treatment and prevention.	Etiology, pathogenesis, clinical features, diagnosis, treatment and prevention of peripheral nervous system disorders. Paraclinical investigations in peripheral nervous system disorders,	Master class.	2,0

		<p>their indications and contraindications.</p> <p>Emergency management of peripheral nervous system disorders. Prevention of peripheral nervous system diseases.</p>		
19	<p>Chronic and chronic, progressive neurological disease:</p> <p>Amyotrophic lateral sclerosis – ALS, Myasthenia Gravis, syringomyelia.</p>	<p>Etiology, pathogenesis, clinical features, diagnosis, treatment of chronic and chronic progressive neurological diseases.</p> <p>Clinical forms of ALS, Myasthenia Gravis, syringomyelia.</p> <p>Emergency management of chronic progressive neurological diseases. (myasthenic crisis, cholinergic crisis, bulbar palsy).</p>	Interactive dialog.	2,0
20	<p>Hereditary degenerative diseases of the nervous system.</p> <p>Chromosomal disorders.</p> <p>Genetic disorders.</p>	<p>Overview of hereditary degenerative diseases of the nervous system.</p> <p>Meiosis. Chromosomal aberrations, genomic mutations, inheritance patterns: autosomal dominant and autosomal recessive.</p> <p>Classifications of hereditary diseases: chromosomal disorders – Down syndrome, Klinefelter syndrome, Shereshevsky-Turner syndrome and genetic disorders: a) neuro-muscular disease- myotonia, myoplegia, myopathy, b) extrapyramidal disorders: hepatocerebral dystrophy, Huntington's chorea, essential tremor, c) pyramidal tracts dysfunction: spastic paraplegia of Shtrumpel, hereditary ataxia, neural amyotrophy. Clinical features, diagnosis, treatment of hereditary degenerative diseases of the nervous system.</p> <p>Clinical forms of myotonia, myoplegia, myopathy, hepatocerebral dystrophy, Huntington's chorea, essential tremor.</p> <p>Genetic consultation.</p>	<p>Slide-presentations provided by both -professor and students.</p> <p>Medical cases.</p>	1,5
21	<p>Demyelinating disorders of the nervous system.</p>	<p>Etiology, pathogenesis, classifications clinical features, diagnosis, differential diagnosis, treatment and prognosis of demyelinating disorders of the nervous system.</p> <p>Clinical forms of multiple sclerosis.</p> <p>Laboratory tests interpretation. Emer-</p>	<p>Round-table discussion.</p> <p>Slide-presentations provided by professor.</p>	2,0

		gency management of demyelinating disorders of the nervous system. Ethical issues in multiple sclerosis.		
22	Autonomic nervous system disorders. Neurosis.	Etiology, pathogenesis, classifications clinical features, diagnosis, differential diagnosis, treatment of autonomic nervous system disorders. Role of inherited factors. -Hypothalamo-Pituitary disorders (acromegaly, cachexia, Cushing disease, adiposogenital dystrophy, sleep disorder; -Thyroid, parathyroid and adrenal disorders (thyrotoxicosis, myxedema, tetany, Addison's disease); -Meniere's disease and Raynaud's disease. Migraine. -Quinke's edema. Main paraclinical investigations in autonomic nervous system disorders. (Rg, ophthalmoscopy, EEG, CT, MRI). Laboratory tests interpretation. Acute migraine treatment. Emergency management of ANS disorders. Ethical and deontological issues in ANS disorders.	«Brainstorm»	0,5
23	Epilepsy and seizure disorders. Syncopes.	Etiology, pathogenesis and role of inheritance factor, classifications, clinical manifestations, diagnosis and treatment, prognosis and prevention of epilepsy. Paraclinical investigation methods of epilepsy patients, their indications and contraindications Management of epilepsy emergencies. Prevention of seizures.	Discussion. Colloquium.	2,0

6 Material and technical support used in the subject:

___ Lectures and practical classes are held in classrooms with multimedia installation, laptops and e-library.

Guidelines for the organization of subject study:

- Unit 1. Propaedeutic of neurology
- Unit 2. Neurological diseases
- Unit 3. Neurosurgery

7. Educational-methodical and informational support used in the subject:

a) Basic references

on mastering the discipline

Students are required to attend classes, complete assignments within the framework of classroom and independent work using recommended textbooks and teaching aids, electronic educational resources, databases, information and reference and electronic search systems. During certification, the quality of stud

1. Neuroanatomy through clinical case by Hal.Blumenfeld, 2011.
2. Handbook of neurology edited by U.S. MARTINOV, MOSCOW 2000, 2013.
3. Guide to neurological history taking and examination. Garabova N.I., Burzhunova M.G., Strutsenko A.A., Nozdryukhina N.V. 2017
4. Glossary on neurology N.U. Nozdrukina, A.A. Strutsenko, N.I. Garabova, Burzhunova M.G.
5. Harrison's Principles of Internal Medicine. Neurology chapters.
6. Oxford Handbook of Neurology by Manji, H., [et al]. 2014.

b) Further Reading

1. Adams and Victor's principles of neurology by Ropper, A. H., Samuels, M. A., Klein, J. P. 2014
2. Bradley's neurology in clinical practice by Daroff, R. B., [et al]. 2016.
3. The 5-minute neurology consult by Lynn, D. J., Newton, H. 2012.
4. Massachusetts General Hospital Handbook of Neurology. by Flaherty A.W., 2007.

c) Software _____

d) Database, information & references and search engines — on RUDN portal.

8. Methodical instructions for students ents' work in the classroom, the completeness and quality of the assignment for independent work, the ability to solve professional and communicative tasks in the field of interpersonal communication are assessed.

Educational materials in electronic form on a number of topics studied are posted on the department's website, in the personal accounts of employees in TUIS, on the local resources of the RUDN University electronic library system. Presentations on the topics of classes can be recorded on CDs or flash cards for independent work of students on a home computer.

9. Fund of assessment tools for intermediate certification of students in the discipline "Nervous diseases, medical genetics, neurosurgery"

Materials for assessing the level of development of educational materials for the discipline "Nervous diseases, medical genetics, neurosurgery" (assessment materials), including a list of competencies with an indication of the stages of their formation, description of indicators and criteria for assessing competencies at different stages of their formation, description of assessment scales, typical control tasks or other materials necessary to assess knowledge, skills, abilities and (or) experience of activity, characterizing the stages of the implementation of competencies in the process of mastering the educational program, methodological materials that determine the procedures for assessing knowledge, skills, skills and (or) experience , characterizing

the stages of the formation of competencies, are developed in full and are available for students on the discipline page in the TUIS RUDN.

The program is compiled in accordance with the requirements of the FSES HE.

Developers:

Associate Professor
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N. V. Nozdrukina

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