MINISTRY OF HIGHER AND SECONDARY SPECIAL EDUCATION OF THE REPUBLIC OF UZBEKISTAN
MINISTRY OF HEALTH CARE OF THE REPUBLIC OF UZBEKISTAN

TERMIZ BRANCH OF TASHKENT MEDICAL ACADEMY
DEPARTMENT OF MEDICAL PSYCHOLOGY, NEUROLOGY AND PSYCHIATRY

«CONFIRMED»
Deputy Director for Academic Affairs
Y.B.Gulyamov
"31" 08 2022

Field of knowledge: 500000 Health care and social security

Education: 510000 Healthcare

Field of study: 5510100 General medicine

WORKING CURRICULUM OF THE SCIENCE OF NEUROLOGY

V course

Total study hours are	187
including:	
Lecture	12
Practical training	96
hours of independent study	79

Termez – 2022

The working curriculum of the science of neurology 5510100, approved by the order of the Uz Res SSV of 2019. 25. 04 No. 107 of the direction of treatment. 2019.25.04 of the Council. made according to the science program approved in the protocol No. 1.

Developers:

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Reviewer:

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The working curriculum of "Neurology" was reviewed at the Department of Medical Psychology, Neurology and Psychiatry and recommended to the branch council.
(Report No. 10 08)

The working science program was discussed and approved at the branch council. (Report No. 31 08)

The head of the department is **D.E. Iskandarova**

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Head of the Educational Methodology Department **M. I. Bozorova**

1. Regulatory documents:

Students of the 5th stage of the courses "5510100-Therapeutic work" and "5511100-Vocational education" studying in the 2022/2023 academic year:

SES: O`zDSt 36.2018:2016;

Qualification requirements: O‘zR SSV 02.10. 2018 yil;

Curriculum: O‘zR SSV 02.10. It is taught according to the curriculum approved by Order No. 564 of 2018.

I. Relevance of educational science and its role in higher professional education

This science program was created based on the State Education Standard of the Republic of Uzbekistan and the qualification requirements of the undergraduate education. This program provides an introduction to the clinical anatomy of the nervous system, damage syndromes and their examination methods, etiology, pathogenesis, diagnosis, comparative diagnosis and principles of treatment of nervous diseases, as well as the acquisition of theoretical and practical skills in the process of studying neurological syndromes and topical and Students will be informed about the principles of nosological diagnosis, paraclinical examinations of neurological patients and will create a foundation for clinical reasoning, disease and its symptoms in future general practitioners.

Pre-clinical sciences: anatomy, histology, normal and pathological physiology, pharmacology serve as a theoretical basis for teaching neurology. The science of neurology serves as a basis for clinical sciences: internal medicine, surgical diseases, obstetrics and gynecology, pediatrics, geriatrics.

II. The purpose and task of educational science

The purpose of teaching neurology is to teach students the basics of general and clinical neurology, disease prevention, early diagnosis and treatment methods.

The task of science:

- basic principles of general and specific neurology;

- promotion of a healthy lifestyle;

- identifying the main neurological syndrome and making a topical, nosological diagnosis based on it;

- formation of concepts about neurological diseases, their etiology, pathogenesis, classification, clinical manifestations, complications and principles of treatment;

- acquiring the skills of professional neurological examination of patients.

- acquisition of emergency care skills in acute neurological diseases;

- formation of doctor's tactics of examination, treatment and preventive knowledge;

- neurologist - know the instructions for sending patients to masters;

- development of practical skills of first aid in case of acute neurological conditions;

– The following requirements are set for the knowledge, skills and qualifications of students in science. Student:

- basics of general neurology,
- determination of the focal point;
- damage to the cranial nerves of the brain;
- to have an idea about syndromal, topical, nosological and final diagnosis bases;
- principles of etiology, diagnosis, prevention and treatment of the most common neurological diseases;
- comparative diagnosis of neurological syndromes;
- should know about the diagnostic methods used in nervous diseases and be able to use them
- methods of checking the sphere of movement;
- methods of checking the sphere of perception;
- movement coordination check methods;
- methods of checking meningeal signs;
- methods of examination of withdrawal symptoms;
- examination of the eye motor nerves;
- examination of facial nerves;
- must have practical skills (including clinical practical skills) of bulbar syndrome examination methods.

Allocated hours for the academic year:

Direction (faculty)	General download	Auditorium hour			Independent education	Type of control
		lecture	practical exercise (seminar)	Clinical study practice.		
Treatment	**187**	**12**	**42**	**54**	**79**	**Control type: IC form: OSKI**

Lectures

Days	Lecture topics	hour
1.	Introduction. Clinical anatomy of the nervous system. Introduction. A brief history of neurology, current achievements and future of neurology. Functional diagnostic methods. Histology of the nervous system. Neuron. Clinical anatomy of central and peripheral nervous system. Higher nervous activity. Hemisphere damage syndrome.	**2**
2	Cerebrovascular diseases. Classification of nervous system diseases. Blood supply of the brain. Classification of cerebrovascular diseases. Ischemic and hemorrhagic strokes: etiology, clinic, diagnosis, methods of treatment and prevention	**2**
3.	Inflammatory diseases of the nervous system. Encephalitis, meningitis, meningoencephalitis, leptomeningitis, myelitis, poliomyelitis. Classification of inflammatory diseases. Etiology, clinic, diagnosis, methods of treatment and prevention. conducting a comparative diagnosis with occupational diseases of the brain and spine. Intoxications.	**2**
4.	Degenerative and demyelinating diseases. Syringomyelia, amyotrophic lateral sclerosis, multiple sclerosis, leukoencephalitis. Etiology, clinic, diagnosis, methods of treatment	**2**

	and prevention.	
5.	Hereditary diseases of the nervous system. Classification. Neuro-muscular diseases (myopathies), pyramidal, extrapyramidal and cerebral degenerations. Etiology, clinic, diagnosis, methods of treatment and prevention. Medico-genetic consultation.	**2**
6.	Epilepsy and paroxysmal conditions. Epilepsy and seizure syndromes. Classification, types of epileptic seizures. Epilepsy diagnosis, principles of treatment. Syncopal conditions: classification, differential diagnosis, main causes and principles of treatment.	**2**
Total		**12**

Lectures are held in an auditorium equipped with multimedia devices for the flow of academic groups.

Practical training

№	**Topic of practical training**	**Hour**
1.	Clinical anatomy of the nervous system. Neuron. Synapse. Clinical anatomy of the spine. Spinal cord segment. Cyto and myeloarchitectonics. Brain stem. Cerebral hemispheres. Inner capsule. Higher nervous activity. Brain damage syndrome.	**4**
2.	Movement coordination and extrapyramidal system. Cerebrum. Structure. Inspection methods. Subcortical nuclei. Strio-pallidar system. Damage syndromes: cerebellar ataxia; hyperkinetic-hypokinetic and akinetic-rigid.	**4**
3.	Movement activity. Voluntary movement path, cortico-spinal and cortico-nuclear pathways, structure, picture, examination methods. Central neuron, function and pathology. Peripheral neuron, function and pathology. A sign of central and peripheral paralysis. Topical diagnosis of damage to movement ways.	**4**
4.	Sensory analyzer. Sensory analyzer: classification, types of superficial, deep and complex senses. Structure of superficial and deep sensory pathways, schematic diagram. Test methods of sensory activity. Common types of sensory impairment (segmental and conductive). Topical diagnosis of sensory dysfunction.	**4**

5.	Cranial nerves. I - olfactory nerve; II - optic nerve; III - the motor nerve of the eye; IV - coil nerve; VI – distal nerve;	**4**
6	V - trigeminal nerve; VII – facial nerve; VIII – auditory nerve; IX - sciatic nerve; X is a traveling nerve; XI - accessory nerve; XII - tylosti nerve: anatomy, examination methods and pathology. Bulbar and pseudobulbar syndrome.	**4**
7	Instrumental diagnosis of nervous diseases: EEG, UZDG, ExoEG, EMG, CT, YAMR, craniogram, spondylogram, lumbar puncture. Medical history analysis, neurological status, resume writing benefits.	**6**
8.	Vascular diseases. Branches of blood supply of the brain. SVK classification. Ischemic stroke classification, etiology, risk factors, pathogenesis, diagnosis, examination methods. Hemorrhagic stroke: classification, etiology, risk factors, pathogenesis, clinic, differential diagnosis, treatment and prevention methods.	**6**
9.	Inflammatory diseases of the nervous system. Cerebral leptomeningitis, chorioependymatitis: classification, etiology, pathogenesis, clinical type, course, differential diagnosis, treatment and preventive methods.	**6**
10	Encephalitis: primary and secondary. Primary encephalitis: epidemic, tick and mosquito encephalitis: etiology, pathogenesis, clinic, differential diagnosis, methods of treatment and prevention. Myelitis. Etiology, pathogenesis, clinic, differential diagnosis, treatment and preventive methods.	**6**
11	Damage to the peripheral nervous system: neuritis (neuritis of the facial nerve, wrist, elbow, median nerve, large and small calf, femur, sphincter nerve) tactics of VOP. Etiology, pathogenesis, clinic, diagnosis, differential diagnosis, treatment, prevention, rehabilitation, dispensary.	**6**
12	Trigeminal neuralgia: VOP tactics. Etiology, pathogenesis, clinic, diagnosis, differential diagnosis, treatment, prevention, rehabilitation, dispensary. Radiculitis (lumbar, neck radiculitis) VOP tactics. etiology, pathogenesis, clinic, diagnosis, differential diagnosis, treatment, prevention, rehabilitation, dispensary.	**6**
13.	Demyelinating and degenerative diseases of the nervous system. Syringomyelia and progressive infectious diseases, multiple sclerosis, amyotrophic lateral sclerosis: rationale, etiology, pathogenesis, clinic, differential diagnosis, treatment and	**6**

	prevention methods	
14.	Epilepsy and paroxysmal conditions. Classification of epilepsy and epileptic seizures. Clinical signs of epileptic seizures. Major epileptic and minor epileptic seizures. Treatment methods. UASH tactics.	**6**
15.	Hereditary diseases of the nervous system. Exacerbating muscular dystopia-myopathy. Hereditary diseases with damage to the pyramidal tract, cerebrum, and spinal cord. Hereditary disease with damage to the extrapyramidal system. Etiology, pathogenesis, clinical types, manifestations, treatment and preventive methods.	**6**
16.	Headache syndrome. Primary headaches: migraine, tension headaches, cluster cephalgia. Secondary headaches: subarachnoid hemorrhage, leptomeningitis, and chorioependymata. Laboratory - instrumental (radiological, EEG, REG, UzDG, ExoES, EMG, CT, YAMR) examination methods.	**6**
17.	Vertigo syndrome. Causes of dizziness. Central and peripheral dizziness. In vascular, inflammatory, metabolic, posttraumatic etiology (Mener's syndrome, labyrinthitis, vestibulopathy, vertebrobasilar insufficiency, psychogenic). Principles of clinic, diagnosis and treatment.	**6**
18.	Good Disruption Syndrome. Coma. Classification. Etiology. Cerebral and metabolic comas. Glasgow scale. Examination of neurological status in comatose patients.	**6**
Total		**96**

Modern (in particular, interactive) methods of education, pedagogical and information-communication (media education, practical program packages, presentation, electronic-didactic) technologies are used in the course of teaching this subject. Based on the results of practice, examples of medicine related to the science of neurology are widely used. In the teaching of the science, patients' medical history, treatment standards, a list of important drugs for life, prescription information of the most commonly used drugs and clinical manuals, electronic versions of educational literature, handouts, test questions are widely used.

1. Independent education

№	Topics of independent work	Hour

1	The function of the upper secondary level: speech, writing, reading, praxis, gnosis. Pathology, injury syndromes.	**4**
2	Ontogeny of the nervous system	**4**
3	Anatomy and physiology of the autonomic nervous system	**4**
4	Disturbance of blood circulation in the spinal cord	**4**
5	Pelvic innervation and disorder syndromes	**4**
6	Brain size and parasitic diseases	**4**
7	Hypothalamic syndrome.	**4**
8	Somatoneurological syndromes (rheumatism, liver, kidney, lung diseases).	**4**
9	Dyssomnias	**4**
10	Pain in the face	**4**
11	Cognitive disorders.	**4**
12	Paraclinical examination methods: EEG, ExoEG, CT, MRI, NSG, REG, TKUZDG, angiography, craniography, lumbar puncture.	**4**
13	Neuritis and neuropathies. Polyneuritis and polyneuropathies. Etiology, clinic, diagnosis, treatment, prevention.	**4**
14	Strokes. Etiological and clinical classification, clinic, diagnosis, treatment, rehabilitation.	**4**
15	Meningitis and chronic cerebral leptomeningitis: classification, etiology, pathogenesis, clinical signs, course, diagnosis, methods of treatment, prevention.	**4**
16	Encephalitis. Classification. Tick, mosquito and epidemic encephalitis: etiology, pathogenesis, clinical symptoms, course, diagnosis, methods of treatment and prevention.	**4**
17	Syringomyelia: etiology, pathogenesis, clinical symptoms, course, diagnosis, methods of treatment and prevention.	**4**
18	Hereditary-degenerative diseases of the pyramidal and cerebellar system. (Strümpel's disease, Friedrich, Pera Marie). Pathogenesis,	**4**

	clinical symptoms, course, diagnosis, methods of treatment and prevention.	
19	Characteristics of blood supply to the brain.	**4**
20	Comatose states. Cerebral comas.	**3**
Total		**79**

Independent study topics are mastered by students outside of the classroom and are taken into account in current subject assessments. Abstracts are prepared by students on topics to be mastered independently and their presentation is organized. Independent work recommended for the Neurological Patient Care module is carried out in the module system in the form of various cases, situational problems and crossword puzzles.

Recommended educational and methodological resources for organizing independent education: manuals, literature, photographs, phantoms, dummies, simulators, equipment, tables, teaching and control tests, computer programs, clinical evening shifts for subjects, volunteering, working in simulation centers, etc.

Independent work is conducted in the audience and outside the audience.

The following forms are used to organize a student's independent work:

- in addition to classroom training, practical skills confirmed in simulators, simulators and simulation halls/centers are performed under the supervision of a pedagogue in terms of quantity and quality and reflected in practical skills mastering notebooks;
- implementation of proven practical skills in the clinical duty organized outside the auditorium in medical higher education institutions clinics and clinical educational bases under the supervision of the doctor-pedagogue on duty in terms of quantity and quality and reflected in the duty notebooks;
- participation in patient care with the attending physician or duty nurse;
- conducting interviews and lectures on sanitary bleaching among the population;
- independent mastering of some theoretical topics with the help of educational literature;
- preparation of information (abstract) on the given topic;
- work and give lectures on special or scientific literature (monographs, articles) on sections or topics of the module;
- solving situational problems focused on situational and clinical problems;
- solving CASE (case-study based on real clinical situations and clinical situations).
- making models, making crosswords, making organizers, etc

Course work (project) in science
Science coursework is not included in the curriculum.

Practical skills

№	Practical skills name	number	Supplies needed to perform practical skills (equipment)
9-10 semester			
1	Methods of checking the sphere of movement;		manuals, literature, photographs, phantoms, dummies, simulators, equipment, charts, instructional and control tests, computer programs, evening shifts for clinical subjects, volunteering, working in simulation centers, etc.
2	Methods of examining the sensory sphere;		
3	Movement coordination methods;		
4	Methods of examination of meningeal signs;		
5	Ways to check for withdrawal symptoms;		
6	Examination of the oculomotor nerves.		
7	Facial nerve examination.		
8	Methods of examination of bulbar syndrome.		

Instructions and recommendations on the organization of educational clinical practice

Clinical practice of students in "Neurology" makes up 50% of the educational process, and practical training is held in the department of "Neurological diseases" and in the neurologist's room of the consulting polyclinic.

In practical training, the process of teaching practical skills is planned in detail and includes several stages:

1. The first stage - based on the goals and tasks of the training, the motivational basis of learning the learned practical skill is determined, its theoretical aspects are discussed. The student will be introduced to the working mechanism and rules of use of the necessary equipment for the implementation of practical skills.

For the implementation of the first stage, the department must have all the equipment and be in working order.

2. The second stage is to demonstrate practical skills and practice many times. A step-by-step algorithm of practical skills for the implementation of this step is demonstrated by the pedagogue and through video films, special attention is paid to the correct execution of the step by step based on the algorithm. Students learn practical skills independently, but under the supervision of a teacher, practicing many times on dummies, simulators, phantoms and mannequins. At the beginning, all the stages are separately, and after they are generalized, they are allowed to use it on the patient after being able to fully and correctly (imitation training).

For the implementation of the second stage, a step-by-step algorithm and video film of practical skills developed by the department, a training manual, a scheme or technique, etc., evaluation criteria should be developed. There should be bicycles, simulators, phantoms and mannequins, imitators, equipment, and the necessary conditions (modeled as close as possible to working conditions) should be created. At this stage, the pedagogue monitors and, if necessary, corrects errors in the work of students. In this process, the student's actions can be videotaped, shown to him, and critically discussed. The student explains to the teacher and other students what his mistake was and then repeats the process. Interactivity occurs when other students participate in acting as experts and evaluating the student's correct mastery of the practical skill. It is desirable to bring practical skills up to the level of automatism.

3. The third stage is the application of the learned knowledge and practical skills to the patient. At this stage, the student is taught to apply the acquired knowledge and practical skills in various clinical situations (including emergency situations), analyze the obtained results and determine action tactics based on this information under the supervision of a pedagogue.

To implement the third stage, the department developed educational and methodological manuals, photos, a set of situational problems and tests, cases, clinical protocols, diagnostic and treatment standards, teaching case histories and outpatient cards, etc. should be used. Interactivity is manifested in the fact that other students participate not only in acting as experts and evaluating the correct mastery of practical skills of the student being taught, but also in working in a team.

4. The fourth stage is the conclusion. At this stage, the pedagogue must make sure that the student can correctly and fully apply the knowledge and skills acquired by the student to patients, in various situations, in the process of activity, and then practical skills are considered mastered.

For the implementation of the fourth stage, the student's independent work with the patient is monitored by the pedagogue, and evaluated when he defends writing medical documents and medical history.

At the end of the lesson, the teacher confirms that each student has mastered practical skills. In cases where the student has not mastered the practical skills, it is recommended to learn them independently outside of the training and re-submit to the pedagogue. A student is considered to have mastered the subject by mastering all practical skills.

Criteria for evaluation and control of student knowledge in science
Forms of current assessment of practical training in neurology

Assessment of students' knowledge is carried out in a 5-grade system

Grade	Mastery (%) and points	The student's level of knowledge
Excellent «5»	90 — 100	The subject knows the clinical anatomy, physiology, and morphology of the nervous system, can make a topical diagnosis of disorders of the examined system. He knows the practical skills of the training topic. The situational problem in the topic correctly solves the test questions.
Good «4»	70 — 89,9	The subject knows the clinical anatomy, physiology, and morphology of the nervous system, can make a topical diagnosis of disorders of the examined system. He knows the practical skills of the training topic. The situational problem in the topic allows for slight errors when solving the test questions.
Satisfactory «3»	60 — 69,9	He knows the anatomy, clinical anatomy, physiology, and morphology of the nervous system in the subject, he knows superficially the disorders of the examined system. Topic cannot make a diagnosis. Makes mistakes when performing practical skills on the subject of training. The situational problem in the topic allows for gross errors when solving the test questions.
not satisfied «2»	0 — 59,9	The student has not mastered the science program, does not understand the essence of the subject of neuroscience and does not have an idea

		about the subject of the science

Transferring the assessment from a 5-point scale to a 100-point scale

SCHEDULE

5 Rating scale	**100-point scale**	**5-point scale**	**100-point scale**	**5-point scale**	**100-point scale**
5,00 — 4,96	100	4,30 — 4,26	86	3,60 — 3,56	72
4,95 — 4,91	99	4,25 — 4,21	85	3,55 — 3,51	71
4,90 — 4,86	98	4,20 — 4,16	84	3,50 — 3,46	70
4,85 — 4,81	97	4,15 — 4,11	83	3,45 — 3,41	69
4,80 — 4,76	96	4,10 — 4,06	82	3,40 — 3,36	68
4,75 — 4,71	95	4,05 — 4,01	81	3,35 — 3,31	67
4,70 — 4,66	94	4,00 — 3,96	80	3,30 — 3,26	66
4,65 — 4,61	93	3,95 — 3,91	79	3,25 — 3,21	65
4,60 — 4,56	92	3,90 — 3,86	78	3,20 — 3,16	64
4,55 — 4,51	91	3,85 — 3,81	77	3,15 — 3,11	63
4,50 — 4,46	90	3,80 — 3,76	76	3,10 — 3,06	62
4,45 — 4,41	89	3,75 — 3,71	75	3,05 — 3,01	61
4,40 — 4,36	88	3,70 — 3,66	74	3,00	60
4,35 — 4,31	87	3,65 — 3,61	73	**less than 3.0**	**Less than 60**

Type of control and evaluation criteria

1. Control of students' knowledge is carried out by conducting current, intermediate and final types of control.

2. The mid-term supervision is conducted during the training sessions in order to assess the student's knowledge and practical skills after the completion of the relevant section of the labor science program during the semester.

3. The type of intermediate control can be conducted up to 2 times for each subject depending on the nature of the subject.

4. The form and duration of the mid-term review is determined by the relevant department based on the nature of the subject and the hours allocated to the subject.

9. During the semester, the Intermediate control type is not held for subjects with less than 4 academic hours (72 hours) per week.

10. The student's performance of practical, seminar, laboratory classes and independent educational tasks, as well as his activity in these classes, are evaluated by the science teacher.

12. The final control is conducted at the end of the course in order to determine the level of mastering of theoretical knowledge and practical skills of the student in the relevant subject.

13. The type of final control is conducted in accordance with the schedule of conducting types of final control developed by the educational and methodological department and approved by the vice-rector for educational affairs.

14. Types of intermediate and final control can be conducted in the form of an objectively structured clinical trial or an objectively structured examination.

Control type and assessment criteria from neurology

Students of the 5th-year neurology faculty of treatment and medical pedagogy pass 1 mid-term test (written) in the autumn or spring semester, and the final test (OSKE) at the end of the cycle.

Conducting intermediate and final control types, as well as evaluating students' knowledge, is carried out by a commission organized by the head of the department.

The composition of the commission is formed from professors and teachers of relevant subjects and experts in the field.

VI. Basic and additional educational literature and information sources

Basic literature

1. Ибодуллаев З.Р. Асаб касалликлари. Дарслик. - Тошкент. “Fan va tehnologiya”. 2013 й.

2. Асадуллаев М.М. Асаб касалликлари пропедевтикаси. Дарслик. - Ташкент. “Ўзбекистон миллий энциклопедияси” Давлат илмий нашриёти. 2008 й.

Additional literature

1. Гафуров Б.Г. Клинические лекции по неврологии. Монография. - Ташкент. “Ибн Сино”. 2016 г.

2. Маджидов Н.М., Гафуров Б.Г., Маджидова Ё.Н. Хусусий неврология. Дарслик. -Тошкент. “Sharq”. 2012 г.

3. Ходос Х.-Б.Г. Нервные болезни. Учебник. -Москва.”Медицинское информационное агентство“ 2002..

4. Яхно Н.Н. Головная боль. Руководство для врачей. -Москва. “Ремедиум”. 2000 г.

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7. http://library.ttatf.uz
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