TARAS SHEVCHENKO NATIONAL UNIVERSITY OF KYIV

Educational and Scientific Centre «Institute of Biology and Medicine»

Department of Internal Medicine

«APPROVE»
Deputy of head of department
on scientific and pedagogical work

Olga KHARCHENKO

EDUCATIONAL PROGRAM INTERNAL MEDICINE
NEUROLOGY

for students

branch of knowledge	22 «Healthcare»
specialty	222 «Medicine»
educational level	«Master»
educational program	«Medicine»
type of discipline	obligatory

Form of study	daytime
The academic year	2023/2024
Semester	7
Number of credits ECTS	4
Language of teaching, learning and evaluation	English
Form of final control	exam

Teachers: _____

Prolonged: on 20__/20__ AY _____(_____) «__»____ 20__year
(signature, name, date)

on 20__/20__ AY _____(_____) «__»____ 20__year
(signature, name, date)

KYIV – 2023

Developer: Mialovytska O.A., D.Med.Sci, professor of department of internal medicine

APPROVED
Head of the Department of Internal Medicine
_____ **Volodymyr BULDA**
(sign)

Protocol № 9 from 07th of June 2023

Approved by scientific and methodical committee of Educational and Scientific Centre «Institute of Biology and Medicine» of

№ 6
Head of the scientific and methodical committee _____ **Natalya SKRYPNYK**

Developer: Mialovytska O.A., D.Med.Sci, professor of department of internal medicine

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1. The purpose of the discipline – provide students with the basics of clinical thinking and professional competencies of the patient's examination and assessment of the main manifestations of diseases of the nervous system, observing the principles of medical ethics and deontology.

2. Preliminary requirements for mastering or choosing a discipline:

1. Successful mastering of the educational disciplines «Medical biology», «Medical and biological physics», «Human anatomy», «Physiology», «Bioorganic and biological chemistry», «Medical chemistry», «Histology, cytology and embryology», «Microbiology, virology and immunology», "Pathological physiology», "Propedeutics of internal medicine", " Pharmacology".

2. The ability to independently apply knowledge of medical biology, medical and biological physics, human anatomy, physiology, bioorganic and biological chemistry, medical chemistry and other educational disciplines for the solution of specific scientific and practical problems; work with scientific and methodological literature.

3. Owning elementary skills of systemic analysis.

3. Annotation of the discipline:

The educational discipline «Neurology» is a part of the program for professional training of specialists of educational level "Master" for the educational program "Medicine". « Neurology» is the obligatory discipline, which studies the methods and techniques of clinical examination of the patient, specifics of the professional communication between the doctor and the patient, the subjective and objective manifestations of diseases (symptoms and syndromes) of nervous system, the causes and mechanisms of their occurrence and development (semiology) in order to establish the topical and clinical diagnosis's.

The study of discipline takes place in two logical stages – the mastering of the basic methods of physical, instrumental and laboratory examination of the patient, after which students master the main symptoms and syndromes in the most common diseases of nervous system and the rules for establishing s topical and clinical diagnosis's.

4. The main tasks of studying the discipline:

1) To interpret the data of functional anatomy and clinical physiology of nervous system
2) To define common symptoms and syndromes of impairments of different parts of

nervous system.

3) To define etiological factors and pathogenic mechanisms of develop of main diseases of nervous system.
4) To made topical and previous clinical diagnosis's of main diseases of nervous system.
5) To ensure that student masters practical skills and methods of physical, instrumental and laboratory examination of the neurological patients.
6) To choose therapeutic tactic of patient's care, to prescribe adequate therapy and to provide emergency care in urgent cases.

According to the requirements of the draft Standard of Higher Education of Ukraine (the second (master's) level of higher education, the branch of knowledge 22 «Healthcare», specialty 222 «Medicine») discipline ensures the acquisition of the following *competencies.*

Integral competencies:

the ability to solve typical and complex specialized tasks and practical problems in professional health care activities, or in the process of learning that involves research and / or innovation and is characterized by complexity and uncertainty of the conditions and requirements.

General competencies:

G.C.03. Ability to learn and master modern knowledge;

G.C 05. Ability to adapt and act in a new situation;

G.C. 11. Ability to make reasonable decisions;

Special (professional, subject matter) competencies:

PC.01. Ability to collect medical information about patient and to analyze clinical examination skills;

PC. 02. Ability to determine the required list of laboratory and instrumental studies and evaluate their results;

PC 03. Ability to make a topical and clinical diagnosis's of the disease;

PC 06. Ability to provide the necessary mode of staying of a patient in a hospital for the treatment of diseases.

5. Results of studying in a discipline:

Results of studying (1 - to know; 2 - to be able; 3 – communication; 4 - autonomy and responsibility)		Forms (and/or methods and technologies) of teaching and learning	Methods of evaluation	Percentage in the final evaluation of the discipline
Code	Results of studying			
	To know			
1.1.	Major etiological and pathogenetic factors in the formation of pathological processes in a human body	Independent work	Intermittent control work 1, 2, final control work; assessment of presentation/report; oral answers/additions	5
1.2.	Methodological basis of clinical examination of the patient, schemes of neurological patient examination	Practical lesson, independent work	Module control work 1, 2, final control work; assessment of presentation/report; oral answers/additions	5
1.3.	Methodological basis of physical examination of the patient –survey, examination of neurological status	Lecture, Practical lesson, independent work	Module control work 1, 2, final control work; assessment of presentation/report; oral answers/additions	5
1.4.	The most important symptoms and syndromes in the clinic of diseases of nervous system and their role in topical diagnosis	Lecture, Practical lesson, independent work	Module control work 1, 2, final control work; assessment of presentation/report; oral answers/additions	5
1.5.	Clinical and diagnostic interpretation of parameters of the most important laboratory and instrumental studies	Practical lesson, independent work	Module control work 1, 2, , final control work; assessment of practical work completion	5
	To be able			
2.1.	Demonstrate the knowledge of moral and deontological principles of a medical specialist and the principles of professional subordination in the clinic of internal diseases	Independent work	Assessment of presentation/report	5
2.2.	Conduct a survey and physical examination of patients and analyze their results in the clinic of diseases of nervous system	Practical lesson	Module control work 1, 2, final control work; assessment of practical work completion	5
2.3.	Make a plan for patient examination in the typical course of the most common diseases of nervous system	Practical lesson, independent work	Module control work 1, 2, final control work; assessment of	10

5. Results of studying in a discipline:

Results of studying (1 - to know; 2 - to be able; 3 – communication; 4 - autonomy and responsibility)		Forms (and/or methods and technologies) of teaching and learning	Methods of evaluation	Percentage in the final evaluation of the discipline
Code	Results of studying			
	To know			
1.1.	Major etiological and pathogenetic factors in the formation of pathological processes in a human body	Independent work	Intermittent control work 1, 2, final control work; assessment of presentation/report; oral answers/additions	5
1.2.	Methodological basis of clinical examination of the patient, schemes of neurological patient examination	Practical lesson, independent work	Module control work 1, 2, final control work; assessment of presentation/report; oral answers/additions	5
1.3.	Methodological basis of physical examination of the patient --survey, examination of neurological status	Lecture, Practical lesson, independent work	Module control work 1, 2, final control work; assessment of presentation/report; oral answers/additions	5
1.4.	The most important symptoms and syndromes in the clinic of diseases of nervous system and their role in topical diagnosis	Lecture, Practical lesson, independent work	Module control work 1, 2, final control work; assessment of presentation/report; oral answers/additions	5
1.5.	Clinical and diagnostic interpretation of parameters of the most important laboratory and instrumental studies	Practical lesson, independent work	Module control work 1, 2, , final control work; assessment of practical work completion	5
	To be able			
2.1.	Demonstrate the knowledge of moral and deontological principles of a medical specialist and the principles of professional subordination in the clinic of internal diseases	Independent work	Assessment of presentation/report	5
2.2.	Conduct a survey and physical examination of patients and analyze their results in the clinic of diseases of nervous system	Practical lesson	Module control work 1, 2, final control work; assessment of practical work completion	5
2.3.	Make a plan for patient examination in the typical course of the most common diseases of nervous system	Practical lesson, independent work	Module control work 1, 2, final control work; assessment of	10

6. The ratio of results of studying discipline with programmatic learning outcomes

Learning outcomes in the discipline (code) / Program learning outcomes (title)	1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	3.1	4.1
Choose and identify the leading clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary data of the patient's anamnesis, data of the patient's examination, knowledge about the person, his organs and systems, to establish the most probable nosological or syndromic preliminary clinical diagnosis of the disease (according to list 2).							+				+	+	+		
Collect information about the general condition of the patient, assess the psychomotor and physical development of the patient, the condition of organs and systems of the body, based on the results of laboratory and instrumental studies to assess information about the diagnosis (list 4).	+	+	+	+	+		+	+	+	+	+		+		
Appoint and analyze additional (mandatory and optional) examination methods (laboratory, radiological, functional and / or instrumental) according to list 4, patients with diseases of organs and systems of the body for differential diagnosis of diseases (list 2).												+	+		
Determine the nature and principles of treatment of patients (conservative, operative) with diseases (according to list 2) in a health care facility, at the patient's home and at the stages of medical evacuation, including in the field, on the basis of a preliminary clinical diagnosis, adhering to the relevant ethical and legal norms, by making an informed decision on existing algorithms and standard schemes, in case of need to expand the standard scheme to be able to justify personalized recommendations under the supervision of a physician.										+	+				+

7. Scheme of mark formation.

7.1. Forms of student evaluation:

- semester assessment:

1. *Module control work 1 – PH 1.1 – 1.5, 2.2-2.8. (block of topics in Section 1) – 10 points / 5 points*
2. *Module control work 2 – PH 1.1 – 1.5, 2.2-2.8. (block of topics in Section 2) – 10 points / 5 points*
3. *Presentations/reports – PH 1.1. - 1.5, 2.1, 4.1. – 10 points / 5 points*
4. *Oral answers/additions - PH 1.1. – 1.5, 2.1, 3.1. – 10 points – 5 points*
5. *Assessment of practical lessons completion - PH 2.2. – 2.8 – 20 points / 10 points*

- Final evaluation: in the form of exam

The total score from the educational component as a whole, the final form of examination for which the exam is established, is defined as the sum of marks (marks) for all successfully evaluated learning outcomes during the semester (grades below the minimum threshold are not added to the final score) and the score obtained during exam. Scores below the minimum threshold are not added to the final score.

The form of the exam - in the form of test control. The results of the training which are evaluated during the exam are PH 1.1-1.5,2.3-2.5,2.8 The maximum number of points that can be obtained by an examiner during the exam is 40 points per 100 ball scale. It is not allowed to complete the semester control in order to improve the positive assessment.

- admission conditions for the final exam:

Mandatory admission to the exam is the completion of all practical work, writing modular control works, writing abstract work on modern issues of hygiene and ecology. An apprentice is not allowed to take an exam if he has scored less than 20 points during the semester.

7.2. Organization of evaluation:

Module control works 1 and 2 are carried out after the completion of corresponding thematic lectures from Section 1 and 2.

The assessment of practical classes is made during the semester.

The assessment of oral answers/additions is made during the lecture course and practical classes.

7. 3. Validity Scale

Excellent	90-100
Good	75-89
Satisfactory	60-74
Fail	0-59

8. Structure of the discipline. Thematic plan

№	Section titles and topics	Number of hours			
		Lectures	Practical lessons	Consultations	Independent work *
	Part 1. **The method of exam of neurological patient. The establishing topical diagnosis.**				
1.	**Lecture 1.** Disorders of unconditioned reflexes. Pathological reflexes. Pyramidal tract. Kinds of palsies.	1			
2.	**Practical lesson 1.** Reflex-motor function of nervous system and its pathology. Kinds of paralyses. Syndromes of mover tract lesion at the different levels.		3		
3.	**The individual independent student's work.** Main stages of phylogenesis and ontogenesis of the nervous system. Structural and functional unit of the nervous system. Basic principles of the nervous system structure and functioning.				4
4.	**Practical lesson 2.** Sensitive function. Syndromes of sensitive disorders.		3		
5.	**The individual independent student's work.** Checking of reflex-motor function of nervous system .				4
6.	**Lecture 2. The sensivity and its disorders.**	1			
7.	**Practical lesson 3.** Extrapyramidal system, characteristic of its lesion. Cerebellum: syndromes of damage. Ataxias types.		3		
8.	**The individual independent student's work.** Checking of Extrapyramidal and coordination system				4
9.	**Practical lesson 4.** Pathology of olfactory and visual analyzers. Attributes of oculomotor group nerves lesion		3		
10.	**Lecture 3.** Pathology of extrapyramidal system. Primary and secondary parkinsonism. Disturbance of the coordination and balance	1			
11.	**Practical lesson 5.** Pathology of trigeminal, facial nerves and n.vestibulocochlearis. Pathology of IX-XII pairs cranial nerves. Bulbar and pseudobulbar syndromes.		3		
12.	**The individual independent student's work.** The mastering of practical skills of examination of cranial nervures.				4
13.	**Lecture 4. Autonomic nervous system pathology.**	1			

14	**Practical lesson 6.** Autonomic nervous system pathology.		3		
15.	**Lecture 5.** Localization of functions in the brain cortex, syndromes of lesions. Disturbance of the higher cortical functions.	1			
16.	**Practical lesson 7.** Disturbance of the higher cortical functions. The syndromes of damage of cortex lobes		3		
17.	**Practical lesson 8.** Liquor system pathology. Meningeal and hypertensive syndromes. Meningitis.		3		
18.	**The individual independent student's work.** Additional researches which are used in neurology.				4
19.	***Intermittent control***		1		
	***Part 2.* Clinical neurology**				
20.	**Lecture 6.** Infectious diseases of central nervous system. Meningitis. Encephalitis.	1			
21.	**Practical lesson 9.** Classification of encephalitis.Clinical presentation. Diagnostic. Treatment. Myelitis. Poliomyelitis. Neurosyphilis. Neuroborreliose.		3		
22.	**Independent student's work.** Parasitic diseases of nervous system. Prion infections. Neurological disorders in cases of HIV				4
23	**Lecture 7.** Cerebral vascular diseases. Transient disturbances of the cerebral circulation. Ischemic and hemorrahagic strokes.	1			
24	**Practical lesson 10.** Transient disturbances of the cerebral circulation. Ischemic and hemorrhagic strokes. Diagnostics, treatment		3		
25	**Independent student's work.** The curation of patient with cerebro-vasculare diseases The spinal cord vasculare diseases.				4
26	**Lecture 8.** Diseases of the peripheral nerves	1			
27	**Practical lesson 11.** Diseases of peripheral nervous system. Neurophatyies.Polyneurophathies. Ganglionitis. Herpetic ganglionitis. Plexitis. Brachial plexitis. Vertebrogenic lesions of peripheral nervous system.		3		
28	**Independent student's work .** Syringomyelia. Congenital defects of brain and spinal cord				4

29.	**Practical lesson 12.** Brain and spinal cord tumors.		3		
30.	**Lecture 9.** Multiple sclerosis. Myasthenia. Miasthenic syndromes.	1			
31	**Practical lesson 13.** Multiple sclerosis. Myasthenia. Miasthenic syndromes. Amyotrophic lateral sclerosis		3		
32.	**Independent student's work** Acuted disseminated encephalomyelitis.				4
33.	**Practical lesson 14.** Closed craniocerebral and spinal trauma		*3*		
34.	**Independent student's work** Hydrocephalus				4
35.	**Independent student's work.** Neurological disorders in cases of somatic diseases.				4
36	**Lecture10.** Epilepsy. Non-epileptic paroxysmal states.	1			
37	**Practical lesson 15.** Epilepsy. Non-epileptic paroxysmal states.		3		
38.	**Independent student's work** Types of headache. Migraine.				4
39	**Practical lesson 16** Hereditary diseases of neuromuscular system.		3		
40	**Independent student's work.** Perynatal pathology. Child cerebral palsy.				4
41	**Independent student's work** Hereditary diseases of, pyramidal, extrapyramidal and coordination systems.				4
42	**Independent student's work.** Neuroses				4
43	*Intermittent control*		2		
	Total:120 hours	10	***50***	0	60

* If there are changes to the educational schedule, see Appendix 1

Total amount of *120 hours*, including:
Lectures – *10 hours*
Practical classes – 50 *hours*
Independent work – *60 hours*

9. Recommended sources:

Basic:

1. L.I.Sokolova, O.A.Myalovitska., V. Krylova, V. Melnyk Neurology – Vinnytsia: Nova Knyha, 2012. – 276 P/\.
2. L.I.Sokolova, O.A.Myalovitska – Neurology tests and clinical tasks. – 2012, 150 c
3. L.Sokolova, L.Panteleienko, T.Dovbonos, V.Krylova, A.Volosovets – Neurology: clinical cases. / Edited by L.Sokolova, L.Panteleienko – Kyev: AUS Medicine Publishing, 2016, 96 p.
4. L. Sokolova Neurology: textbook / I.A. Hryhorova, L.I. Sokolova, R.D. Herasymchuk et al. 2017. P624

Additional:

1. FUNDAMENTALS OF NEUROLOGY: AN ILLUSTRATED GUIDE, 2nd edn H Mattle, M Mumenthaler Thieme, 2017
1. Duus' Topical Diagnosis in Neurology: Anatomy - Physiology - Signs - Symptoms 5th edition by Mathias Bähr (Author), Michael Frotscher (Author)/