

**MINISTRY OF HEALTH OF UKRAINE  
ODESA NATIONAL MEDICAL UNIVERSITY  
Faculty of medicine, international  
Department of Neurology and Neurosurgery**

**Syllabus of the academic discipline  
«NEUROLOGY»**

<b>Amount academic discipline</b>	Total number of hours per discipline: 105 hours, 3,5 credits. Semesters: VII - VIII. 4th year of study.
<b>Days, time, place conducting an educational discipline</b>	According to the schedule of classes. Department of Neurology and Neurosurgery. 1). Odesa, st. Akademika Zabolotny 26, Municipal non-commercial enterprise "Odesa Regional Clinical Hospital", 8th floor. 2). Odesa, st. Tinista 8, Center for Reconstructive and Restorative Medicine (University Clinic), 3rd floor
<b>Teacher(s)</b>	Anatoliy SON, MD., DSci, professor, head of the department Vasyl DOBROVOLSKYI, MD., PhD., Associate Professor Julia SOLODOVNIKOVA, MD., PhD., Associate Professor Olena KOLESNIK, PhD, assistant Iryna HNATYUK, assistant Ksenia YAROVA, assistant
<b>Contact information</b>	phone (048) 7500318 e-mail: <a href="mailto:neurology@onmedu.edu.ua">neurology@onmedu.edu.ua</a> Consultations by the teacher on duty according to the schedule. Online consultations are held using the Ms Teams, by prior arrangement.

### COMMUNICATION

Communication with applicants will be conducted in the classroom (face-to-face).

During distance learning, communication is carried out through the Microsoft Teams platform, as well as through e-mail correspondence, Telegram, Viber messengers (through the leader of the group).

### ABSTRACT OF THE EDUCATIONAL DISCIPLINE

*The subject of studying the discipline* is the regularity of the functioning of the nervous system; features of clinical manifestations, Themeal diagnosis and principles of treatment of neurological diseases.

*Prerequisites and post-requisites of the discipline (place of the discipline in the educational program):*

*Prerequisites:* Ukrainian language (by professional direction), foreign language (by professional direction), Latin language and medical terminology, medical biology, medical and biological physics, biological and bioorganic chemistry, human anatomy, histology, cytology and embryology, physiology, microbiology, virology and immunology, life safety; basics of bioethics

and biosafety, pathomorphology, pathophysiology, pharmacology, medical psychology, otorhinolaryngology, ophthalmology, psychiatry, narcology, dermatology, venereology.

*Postrequisites:* internal medicine, surgery, obstetrics and gynecology, infectious diseases, epidemiology and principles of evidence-based medicine, oncology and radiation medicine, traumatology and orthopedics, phthisiology, anesthesiology and intensive care, emergency and urgent medical care, hygiene and ecology, palliative and hospice medicine , general practice (family medicine).

*The purpose of the discipline:* acquisition by the student of additional knowledge and mastering of professional competences and skills in the diagnosis, treatment and prevention of neurological diseases.

*Tasks of the discipline:*

1. Formation of communication skills and abilities, moral-ethical and deontological qualities during professional communication with the patient.

2. Acquisition of knowledge of the structure, functioning, diagnosis of clinical manifestations of disorders, principles of treatment and prevention of diseases of the nervous system.

3. Acquisition of skills and abilities to examine a neurological patient and record the results in the relevant medical documentation;

*Expected results:*

*As a result of studying the academic discipline, the applicant must:*

*To know:*

- symptoms of central and peripheral paresis.
- movement disorders with damage to the motor path at different levels.
- anatomical-physiological, biochemical data of the extrapyramidal system and syndromes of its damage.
- anatomical and physiological features of the cerebellum and syndromes of its damage.
- clinical classification of sensitivity, types of sensitive disorders, Thameal types of sensitive disorders.
- anatomical and physiological features and pathology of cranial nerves.
- pathology of the autonomic nervous system.
- cerebral cortex damage syndromes.
- changes in cerebrospinal fluid and meningeal symptom complex.
- anatomical features of the blood supply of the brain and spinal cord.
- principles of classification of vascular diseases of the brain.
- principles of prevention and treatment of acute disorders of cerebral circulation.
- modern classification of epileptic and non-epileptic paroxysmal states.
- the main types of cephalgia and the tactics of their treatment.
- modern ideas about the mechanisms of action of chemical and physical agents on the nervous system.
- principles of classification of infectious diseases of the nervous system.
- clinic of the main nosological forms of infectious diseases.
- manifestations of damage to the nervous system in the presence of HIV infection.
- modern aspects of etiopathogenesis, clinical forms, treatment of demyelinating diseases.
- principles of formation of vertebral and non-vertebral diseases of the peripheral nervous system.
- clinical features of perinatal damage to the nervous system.
- neurological manifestations of hereditary degenerative diseases of the neuromuscular, extrapyramidal, pyramidal, cerebellar systems.
- neurological syndromes in diseases of internal organs, paraneoplastic syndromes.

- congenital defects of the spine and spinal cord.
- groups of drugs that are used in patients with a neurological profile.

*Be able:*

- diagnose paresis and paralysis; detect signs of central and peripheral paresis.
- diagnose sensitivity disorders.
- to diagnose meningeal syndrome and determine the indications for performing a lumbar puncture.
- identify signs of bulbar syndrome.
- to diagnose the symptoms of damage to the cranial nerves.
- conduct coordination tests, diagnose symptoms of cerebellar lesions.
- to diagnose language disorders.
- diagnose status epilepticus and provide emergency care.
- to diagnose neurological manifestations of craniocerebral and spinal trauma.
- perform a neurological examination of patients.

## DESCRIPTION OF THE EDUCATIONAL DISCIPLINE

### *Forms and methods of education*

The discipline will be taught in the form of lectures (12 hours), practical classes (72 classroom hours), organization of independent work of the student (36 hours).

*Teaching methods:* interview, solution of clinical situational problems, examination of the patient, instruction and practice of skills.

### *Content of the academic discipline*

#### *Thematic plan of lectures*

1. Introduction to neurology. Principles of the structure and functions of the nervous system. Symptoms of central and peripheral paresis. Syndromes of damage to the motor path at different levels. Automated involuntary movements. Coordination of movements. Extrapyramidal system and syndromes of its damage.
2. Higher brain functions and their disorders. Localization of functions in the cerebral cortex and lesion syndromes.
3. Vascular diseases of the brain and spinal cord.
4. Paroxysmal conditions in the clinic of nervous diseases.
5. Neurological aspects of brain injury.
6. Demyelinating diseases of the nervous system.

#### *Content of the academic discipline*

Theme 1. The main stages of the development of neurological science.

Theme 2. Principles of the structure and functioning of the nervous system. Motor system. Concept of reflex and reflex arc.

Theme 3. Voluntary movements and their disorders. Pyramid system. Symptoms of central and peripheral paresis.

Theme 4. Automated involuntary movements. Coordination of movements. Extrapyramidal system and syndromes of its damage.

Theme 5. Cerebellum, cerebellar damage syndromes.

Theme 6. Sensitive system and symptoms of its damage. Types and types of sensitivity disorders.

Theme 7. Cranial nerves I, II, VIII and syndromes of their damage.

- Theme 8. Cranial nerves III, IV, VI and syndromes of their damage.
- Theme 9. Cranial nerves V, VII and syndromes of their damage.
- Theme 10. Cranial nerves IX, X, XI, XII and syndromes of their damage. Bulbar and pseudobulbar syndromes. Alternating syndromes.
- Theme 11. Autonomic nervous system. Methods of studying the autonomic nervous system. Pathology of the autonomic nervous system.
- Theme 12. Localization of functions in the cerebral cortex. Injury syndromes.
- Theme 13. Cerebrospinal fluid, its changes. Meningeal syndrome.
- Theme 14. Functional diagnosis of diseases of the nervous system.
- Theme 15. Blood supply of the brain and spinal cord.
- Theme 16. Vascular diseases of the brain and spinal cord. Chronic disorders of cerebral circulation.
- Theme 17. Ischemic stroke. Hemorrhagic stroke.
- Theme 18. Epilepsy and non-epileptic paroxysmal states.
- Theme 19. Headache. Disturbance of sleep and alertness.
- Theme 20. Professional and domestic neurointoxication. Damage to the nervous system under the influence of physical factors.
- Theme 21. Neurological aspects of brain injury. Spinal injury.
- Theme 22. Meningitis. Arachnoidites.
- Theme 23. Encephalitis.
- Theme 24. Poliomyelitis. Acute myelitis. Amyotrophic lateral sclerosis.
- Theme 25. Neurosyphilis. Tuberculosis of the nervous system.
- Theme 26. Demyelinating diseases of the nervous system.
- Theme 27. Structure and functions of the peripheral nervous system. Symptoms of nerve tension.
- Theme 28. Diseases of the peripheral nervous system. Paraneoplastic polyneuropathies, palliative treatment.
- Theme 29. Somatoneurological syndromes.
- Theme 30. Hereditary degenerative diseases of the nervous system.
- Theme 31. Practical skills.
- Theme 32. Independent curation of patients with compilation of medical history.
- Theme 33. Tumors of the brain and spinal cord. Brain abscess.
- Theme 34. Parasitic diseases of the nervous system, prion infections.
- Theme 35. Congenital defects of the spine and spinal cord. Syringomyelia.
- Theme 36. Perinatal lesions of the nervous system.
- Theme 37. Medicines used in neurology. The procedure for providing palliative care to incurable patients. Order of the Ministry of Health No. 41 of January 21, 2013.
- Theme 38. Damage to the nervous system in the presence of HIV infection.

*Recommended literature (basic):*

1. Neurology: textbook / I.A. Hryhorova, L.I. Sokolova, R.D. Herasymchuk et al.; edited by I.A. Hryhorova, L.I. Sokolova. – Kyiv : AUS Medicine Publishing, 2017. – 624 p.
2. Netter Atlas of Human Anatomy: Classic Regional Approach: Professional Edition with NetterReference Downloadable Image Bank (Netter Basic Science) 8th Edition by Frank H. Netter MD / Publisher : Elsevier; 8th edition (April 25, 2022). - 712 p. ISBN-10 : 0323793738 ISBN-13 : 978-0323793735
3. Neuroanatomy through Clinical Cases 3rd Edition By Hal Blumenfeld / Publisher : Sinauer Associates is an imprint of Oxford University Press; 3rd edition (February 28, 2021).- 1056 p. ISBN-10 1605359629: ISBN-13 : 978-1605359625

4. Pocket Neurology (Pocket Notebook Series) Third Edition By M. Brandon Westover MD PhD Publisher : LWW; Third edition (October 16, 2021). - 390 p. ISBN-10 : 1975169034 ISBN-13 : 978-1975169039

## EVALUATION

*Ongoing control:* oral survey, testing, assessment of performance of practical skills, solution of situational clinical tasks, assessment of activity in class.

### Criteria of ongoing assessment at the practical class

<i>Score</i>	<i>Assessment criterion</i>
Excellent «5»	The student is fluent in the material, takes an active part in discussing and solving a situational clinical problem, confidently demonstrates practical skills during patient examination and interpretation of clinical, laboratory and instrumental research data, expresses his opinion on the subject of the lesson, demonstrates clinical thinking.
Good «4»	The student has a good command of the material, participates in the discussion and solution of a situational clinical problem, demonstrates practical skills during a patient examination, interpretation of clinical, laboratory and instrumental research data with some errors, expresses his opinion on the subject of the class, demonstrates clinical thinking.
Satisfactory «3»	The student does not have sufficient knowledge of the material, is unsure of participating in the discussion and solution of the situational clinical problem, demonstrates practical skills during the examination of the patient and the interpretation of clinical, laboratory and instrumental research data with significant errors.
Unsatisfactory «2»	The student does not possess the material, does not participate in the discussion and solution of the situational clinical problem, does not demonstrate practical skills during the examination of the patient and the interpretation of clinical, laboratory and instrumental research data.

*Forms and methods of final control:* **exam.**

Only those applicants who have fulfilled the requirements of the training program in the discipline, have no academic debt, their average score for the current educational activity in the discipline is at least 3.00, and they have passed the test control according to the tests "STEP - 2" are admitted to the final control in the form of an exam. » at least 90% (50 tasks).

The test control is conducted in the Educational and Production Complex of Innovative Technologies of Learning, Informatization and Internal Monitoring of the Quality of Education of the University in the last class before the exam.

### Evaluation of learning results during the final control

<i>The content of the evaluated activity</i>	<i>Scores</i>
The answer to the theoretical questions of the exam ticket (3 questions, 1 point for each).	3
Practical task according to the type of OSKI (neurological examination methodology).	1
Practical task according to the OSKI type (interpretation of neurological examination data (topical diagnosis) and demonstration of clinical thinking).	1

**Criteria for evaluating the learning outcomes of education students on the exam**

<i>Score</i>	<i>Criteria for evaluating</i>
Excellent «5»	The student correctly, accurately and completely fulfilled all the tasks of the examination ticket, clearly and logically answered the questions posed by the examiners. Thoroughly and comprehensively knows the content of theoretical issues, fluent in professional and scientific terminology. Thinks logically and constructs an answer, freely uses acquired theoretical knowledge when analyzing practical tasks. When solving a practical task according to the OSKI type, he correctly demonstrated the implementation of practical skills, strictly followed the algorithm of their implementation, demonstrated clinical thinking.
Good «4»	The student completed all the tasks of the examination ticket sufficiently completely, clearly and logically answered the questions posed by the examiners. He knows the content of theoretical issues deeply and comprehensively, and has professional and scientific terminology. Thinks logically and constructs an answer, uses acquired theoretical knowledge when analyzing practical tasks. But when teaching some questions, there is not enough depth and argumentation, it makes insignificant mistakes, which are eliminated by the applicant himself when the examiner points them out. When solving a practical task of the OSKI type, he made minor mistakes in the algorithm and technique of performing skills, which were corrected at the instruction of the teacher.
Satisfactory «3»	The student of education incompletely completed all the tasks of the examination ticket, the answers to additional and leading questions are vague and vague. Possesses a basic amount of theoretical knowledge, uses professional and scientific terminology inaccurately. Experiences significant difficulties in constructing an independent logical answer, in applying theoretical knowledge in the analysis of practical tasks. There are significant errors in the answers. When solving a practical task according to the OSKI type, significant errors were made in the algorithm and skill performance technique.
Unsatisfactory «2»	The student of education did not complete the task of the examination ticket, in most cases did not answer the additional and leading questions of the examiners. He did not master the basic amount of theoretical knowledge, he showed a low level of mastery of professional and scientific terminology. Answers to questions are fragmentary, inconsistent, illogical, cannot apply theoretical knowledge when analyzing practical tasks. There are a significant number of gross errors in the answers. When solving a practical task according to the OSKI type, he did not demonstrate or make gross errors and mistakes in the algorithm and skill performance technique.

The grade for the discipline consists of 50% of the grade for the current academic performance and 50% of the grade for the exam.

The obtained average score for the academic discipline for applicants who have successfully mastered the work program of the academic discipline is converted from a traditional four-point scale to points on a 200-point scale, as shown in the table:

### Conversion table of traditional to multi-point

<i>National score for the discipline</i>	<i>The sum of scores for the discipline</i>
Excellent («5»)	185 – 200
Good («4»)	151 – 184
Satisfactory («3»)	120 – 150
Unsatisfactory («2»)	Less than 120

A multi-point scale (200-point scale) characterizes the actual success of each applicant in learning the educational component. The conversion of the traditional grade (average score for the academic discipline) into a 200-point grade is performed by the information and technical department of the University.

According to the obtained points on a 200-point scale, the achievements of the applicants are evaluated according to the ECTS rating scale. Further ranking according to the ECTS rating scale allows you to evaluate the achievements of students from the educational component who are studying in the same course of the same specialty, according to the points they received.

The ECTS scale is a relative-comparative rating, which establishes the applicant's belonging to the group of better or worse among the reference group of fellow students (faculty, specialty). An "A" grade on the ECTS scale cannot be equal to an "excellent" grade, a "B" grade to a "good" grade, etc. When converting from a multi-point scale, the limits of grades "A", "B", "C", "D", "E" according to the ECTS scale do not coincide with the limits of grades "5", "4", "3" according to the traditional scale. Acquirers who have received grades of "FX" and "F" ("2") are not included in the list of ranked acquirers. The grade "FX" is awarded to students who have obtained the minimum number of points for the current learning activity, but who have not passed the final examination. A grade of "F" is given to students who have attended all classes in the discipline, but have not achieved a grade point average (3.00) for the current academic activity and are not admitted to the final examination.

Applicants who study in one course (one specialty), based on the number of points scored in the discipline, are ranked on the ECTS scale as follows:

#### Conversion of the traditional evaluation and and ECTS scores

<i>Score on the ECTS scale</i>	<i>Statistical indicator</i>
A	The best 10% students
B	Next 25% students
C	Next 30% students
D	Next 25% students
E	Next 10% students

### INDEPENDENT WORK OF HIGHER EDUCATION ACQUIRES

Independent work involves preparation for the relevant themes of the study of the discipline according to the thematic plan.

### EDUCATIONAL DISCIPLINE POLICY

#### *Deadlines and Rescheduling Policy:*

- Absences of classes for non-respectable reasons are worked out according to the schedule of the teacher on duty.
- Absences due to valid reasons are processed according to an individual schedule with the permission of the dean's office.

*Academic Integrity Policy:*

Applicants must observe academic integrity, namely:

- independent performance of all types of work, tasks, forms of control provided for by the work program of this educational discipline;
- references to sources of information in the case of using ideas, developments, statements, information;
- compliance with the legislation on copyright and related rights;
- provision of reliable information about the results of one's own educational (scientific) activity, used research methods and sources of information.

Unacceptable in educational activities for participants of the educational process are:

- using family or official ties to obtain a positive or higher grade during any form of control of learning outcomes or academic performance;
- use of prohibited auxiliary materials or technical means (cheat sheets, notes, micro-earphones, telephones, smartphones, tablets, etc.) during control measures;
- passing procedures for control of training results by fake persons.

For violation of academic integrity, students may be held to the following academic responsibility:

- a decrease in the results of assessment of control work, assessment in class, credit, etc.;
- retaking the assessment (control work, credit, etc.);
- appointment of additional control measures (additional individual tasks, control works, tests, etc.);
- conducting an additional inspection of other works authored by the violator.

*Attendance and Tardiness Policy:*

Uniform: a medical gown that completely covers the outer clothing, or medical pajamas, a cap, a mask, and a change of shoes.

State of health: applicants suffering from acute infectious diseases, including respiratory diseases, are not allowed to attend classes.

A student who is late for class can attend it, but if the teacher has put "nb" in the journal, he must complete it in the general order.

*Use of mobile devices:*

Mobile devices may be used by students with the teacher's permission if they are needed to complete the task.

*Behavior in class:*

The behavior of students and teachers in the classrooms should be working and calm, strictly comply with the rules established by the Regulations on academic integrity and ethics of academic relations at Odessa National Medical University, in accordance with the Code of Academic Ethics and University Community Relations of Odessa National Medical University, Regulations on Prevention and detection of academic plagiarism in the research and educational work of students of higher education, scientists and teachers of Odessa National Medical University.