

**MINISTRY OF HEALTH PROTECTION OF UKRAINE**  
**ODESSA NATIONAL MEDICAL UNIVERSITY**

Faculty of medicine, international  
Department of Neurology and Neurosurgery

**Syllabus of the academic discipline**  
**OK 44.2 "NEUROSURGERY"**

<b>Amount academic discipline</b>	Total number of hours per discipline: 30 hours, 1.0 credit. Semesters: XI - XII 6th year of study.
<b>Days, time, place conducting an educational discipline</b>	According to the schedule of classes. Department of Neurology and Neurosurgery. 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 Ihor Serbin, assistant Olena Kolesnik, assistant
<b>Contact Information</b>	Phone (048) 7500318 e-mail: neurology@onmedu.edu.ua Consultations by the teacher on duty according to the schedule. Online consultations are held using the Ms Teams by prior agreement.

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 groups created in the messenger for each study group, separately through the head of the group).

### **ABSTRACT OF THE EDUCATIONAL DISCIPLINE**

The subject of the study of the discipline - the study of the educational discipline is: neurosurgery - applied and fundamental medical science, a practical branch of medicine, which is the surgery of diseases and lesions of the central and peripheral nervous system of various genesis (traumatic, tumor, infectious, parasitic, etc.), vascular pathology of the main and spinal cord, surgery on the leading pathways and centers of the central nervous system, surgery of intractable pain syndromes and consequences of lesions of the central nervous system and PNS of various genesis.

*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, neurology, internal medicine, surgery, obstetrics and gynecology, infectious diseases, epidemiology and principles of evidence-based medicine, oncology and radiation medicine .

*Postrequisites:* traumatology and orthopedics, phthisiology, anesthesiology and intensive care, emergency and emergency medical care, hygiene and ecology, palliative and hospice medicine, general practice (family medicine).

The goal of the discipline: teaching the educational discipline "Neurosurgery" is to improve knowledge of diagnosis, treatment and prevention of diseases of the nervous system

*Tasks of the discipline:*

1. surgical diseases and lesions of the central and peripheral nervous system of various genesis (traumatic, tumor, infectious, parasitic, etc.), vascular pathology of the brain and spinal cord, surgery on the leading pathways and centers of the central nervous system, surgery for intractable pain syndromes and the consequences of lesions of the central nervous system systems and PNS of various genesis. Knowledge of the basics of the clinical course of neurosurgical diseases, modern methods of diagnosis and treatment of neurosurgical patients, the ability to provide emergency care.
2. acquisition of skills and abilities for examination of the patient and registration of the results in the relevant medical documentation;
3. formation of moral and ethical and deontological qualities during professional communication with the patient.

*Expected results:*

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

*Know:*

- To determine the etiological and pathogenetic factors of the most common neurosurgical diseases.
- Determine the tactics of managing neurosurgical patients and analyze the data of auxiliary examinations
- Present a typical clinical picture and make a preliminary diagnosis of the main neurosurgical diseases.
- To analyze the main indicators of laboratory-instrumental methods of research of neurosurgical patients.

*Be able:*

- Communicate with the patient and his relatives, collect complaints, anamnesis of life and diseases.
- Conduct a clinical neurological examination according to standard methods.
- To analyze the results of laboratory, functional and instrumental studies in patients with diseases of the nervous system.
- Carry out differential diagnosis and substantiate the clinical diagnosis.
- Determine tactics and provide emergency medical care to patients with diseases of the nervous system in emergency situations.
- Determine the nature and principles of treatment of patients with diseases of the nervous system on the basis of a preliminary clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes.
- Perform medical manipulations (according to list 5) in patients with diseases of the nervous system.
- Maintain medical records of patients with diseases of the nervous system.

## **DESCRIPTION OF THE EDUCATIONAL DISCIPLINE**

*Forms and methods of education*

The discipline will be taught in the form of practical classes (16 classroom hours), organization of students' independent work - (29 hours).

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

*Content of the academic discipline*

- Topic 1. Development stages of neurosurgery.  
 Topic 2. Auxiliary methods of examination in neurosurgery.  
 Topic 3. Traumatic lesions of the nervous system. Closed craniocerebral injury (TBI). Open TBI, clinic, diagnosis.  
 Topic 4. Spinal cord injury. Traumatic injuries of the peripheral nervous system.  
 Topic 5. Gunshot wounds of the skull and brain.  
 Topic 6. Brain tumors.  
 Topic 7. Hydrocephalus.  
 Topic 8. Peculiarities of management of incurable patients and the use of palliative treatment methods in neurosurgical practice.  
 Topic 9. Abscesses of the brain, epiduritis.  
 Topic 10. Vascular pathology of the brain, accompanied by hemorrhagic stroke.  
 Topic 11. Vascular pathology of the brain, which is accompanied by ischemic stroke. Pathology of spinal cord vessels.  
 Topic 12. Tumors of the spinal cord.  
 Topic 13. Osteochondrosis.  
 Topic 14. Functional and restorative neurosurgery. Surgical treatment of pain syndromes.  
 Topic 15. Malformations of the brain and spinal cord.

*Thematic plan of practical classes*

<b>№</b>	<b>Theme name</b>	<b>Hours</b>
<b>1.</b>	Theme 3. Traumatic lesions of the nervous system. Closed craniocerebral injury (TBI). Open TBI, clinic, diagnostics.	2
<b>2.</b>	Theme 4. Spinal cord injury (SCI). Traumatic injuries of the peripheral nervous system.	2
<b>3.</b>	Theme 6. Brain tumors.	2
<b>4.</b>	Theme 7. Hydrocephalus.	2
<b>5.</b>	Theme 10. Vascular pathology of the brain, accompanied by hemorrhagic stroke.	2
<b>6.</b>	Theme 11. Vascular pathology of the brain accompanied by ischemic stroke Pathology of spinal cord vessels.	2
<b>7.</b>	Theme 12. Tumors of the spinal cord.	2
<b>8.</b>	Theme 13. Osteochondrosis.	2
<b>9.</b>	Theme 14. Functional and restorative neurosurgery. Surgical treatment of pain syndromes.	2
	<b>The total number of hours in the discipline</b>	<b>18</b>

*Independent work of a student of higher education*

<b>№</b>	<b>Title of the Theme / types of tasks</b>	<b>Hours</b>
	Independent study of Themes that are not part of the classroom lesson plan:	
1	Theme 1. Stages of development of neurosurgery.	2
2	Theme 2. Additional methods of examination in neurosurgery.	2
3	Theme 5. Gunshot wounds of the skull and brain.	2
4	Theme 8. Peculiarities of management of incurable patients and the use of palliative treatment methods in neurosurgical practice.	2
5	Theme 9. Abscesses of the brain, epiduritis.	2
6	Theme 15. Malformations of the brain and spinal cord.	2
	<b>Total</b>	<b>12</b>

*List of recommended literature*

**Basic:**

- Handbook of Neurosurgery 9th Edition by Mark S. Greenberg / Publisher : Thieme; 9th edition (October 23, 2019).- 1784 p. ISBN-10 : 1684201373 ISBN-13 : 978-1684201372
- 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.

### **Additional:**

- 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
- 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
- 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
- Topical Diagnosis in Neurology. Anatomy, Physiology, Signs, Symptoms / Mathias Baehr, Michael Frotscher (6 edition) – Thieme, 2019 - 332 p.
- Adams and Victor's Principles of Neurology / Allan Ropper, Martin Samuels, Joshua Klein, Sashank Prasad (11th edition). - McGraw-Hill, 2019. - 1664 p.
- Clinical Neuroanatomy Made Ridiculously Simple: Color Edition 6th Edition by Stephen Goldberg M.D. / Publisher: MedMaster; 6th edition (September 14, 2022).- 112 p. ISBN-10 : 1935660519 ISBN-13 : 978-1935660514
- Clinical Neurology and Neuroanatomy: A Localization-Based Approach, Second Edition 2nd Edition by Aaron Berkowitz / Publisher : McGraw Hill / Medical; 2nd edition (July 21, 2022).- 384 p. ISBN-10 : 1260453367 ISBN-13 : 978-1260453362

### **13. Electronic information resources**

1. Medical Books On-line Library (Neurology) – free download  
<http://medbookshelf.info/category/neurology/>

### **Criteria of ongoing assessment at the practical class**

Score	Assessment criterion
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.

Final control in the form of credits is evaluated on a two-point scale:

- the grade «passed» is awarded to the applicant who has completed the work program of the educational component and has no academic debt; the level of competence is high (creative);
- the grade «failed» is given to the applicant who has not completed the work program of the educational component, has academic debt (average score lower than 3.0 (120 points) and/or missed classes); the level of competence is low (receptive-productive).

### **Distribution of points, obtained by the student**

The average grade in the discipline is converted to the national grade and converted to points on a multi-point scale (200-point scale).

Conversion of traditional assessment into 200-point is carried out by the information and technical department of ONMedU by the special program by the formula:

Average score (current academic performance) x 40.

### **Conversion table of traditional to multi-point**

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

According to the ECTS rating scale, students' achievements in educational discipline, who study on the same course of one specialty, according to their scores, are assessed by means of rank, namely:

Conversion of the traditional evaluation and and ECTS scores

Score on the ECTS scale	Statistical indicator
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 topics 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 permission of the instructor if they are needed for the assignment.

#### *Behavior in the audience:*

The behavior of applicants and teachers in the classrooms must 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 research and educational work of students of higher education, scientists and teachers of Odessa National Medical University