

SYLLABUS

1. General information on the course

Full course name	Clinical and Neurological Foundations of Speech Disorders. Diagnosis and Recovery Methods
Full official name of a higher education institution	Sumy State University
Full name of a structural unit	Academic and Research Medical Institute. Кафедра нейрохірургії та неврології з курсами психіатрії, наркології, медичної психології, професійних хвороб
Author(s)	Kolenko Oksana Ivanivna
Cycle/higher education level	The Second Level Of Higher Education, National Qualifications Framework Of Ukraine – The 7th Level, QF-LLL – The 7th Level, FQ-EHEA – The Second Cycle
Duration	two semesters
Workload	5 ECTS, 150 hours. For full-time course 50 hours are working hours with the lecturer (50 hours of seminars), 100 hours of the individual study.
Language(s)	English

2. Place in the study programme

Relation to curriculum	Elective course available for study programme "Medicine"
Prerequisites	There are no specific pre-requisites
Additional requirements	There are no specific requirements
Restrictions	There are no specific restrictions

3. Aims of the course

To promote the development of general and professional competencies specified in the educational and professional program, in particular: interpersonal skills; ability to work in a team; ability to interpret pathological processes and disorders, and apply appropriate speech therapy methods to correct them.

4. Contents

Topic 1 The history of the development of ideas about speech disorders

Concept of speech disorders. Comparison of domestic and Western classifications of speech disorders. Concept of higher cortical functions as the basis of speech. Speech as a component of higher nervous activity. Functional and socio-psychological causes of speech disorders. Critical periods in the development of a child's speech function. Factors that cause speech disorders (exogenous-organic, hereditary, social). Comparison of the causes of underdevelopment of children's speech and defects in established speech

Topic 2 Neuropsychological aspects of speech disorders in clinical medicine

Morphofunctional organization and age norms for the formation and changes in higher mental functions, the basics of the theory and practice of neuropsychological diagnosis of the state of formation of higher mental functions, and the main directions of psychomotor and cognitive correction of higher mental functions in patients of different ages with speech disorders.

Topic 3 Scientific and theoretical aspects of aphasia research. Etiopathogenesis of clinical forms of aphasia.

The concept of aphasiology. Current problems and prospects for development. The general psychological significance of aphasiology. The tasks of aphasiology. The current state, problems, and sources of crisis in the modern stage of aphasiology. Current scientific ideas about the genesis, structure, and decay of the VPF. The concept of a factor. The connection between aphasiology and psychology, neuropsychology, physiology, neurology, and psycholinguistics. A new comprehensive scientific approach to the study of aphasia. Characteristics of the structure of the defect. Principles of classification of aphasia. Damage to the anterior speech area. Lesions of the posterior modality-specific areas of the cortex, lesions of the posterior speech areas. Analysis of efferent motor aphasia. Localization, the central mechanism of the disorder, the clinical picture, and disorders of the psychological structure of speech. Analysis of dynamic aphasia. Localization, the brain mechanism of impairment, clinical picture, and impairment of the psychological structure of speech. Analysis of afferent motor aphasia. Localization, the clinical mechanism of impairment, clinical symptoms, and impairment of the psychological structure of speech. Analysis of acoustic-gnostic aphasia. Localization, clinical mechanism of impairment, clinical symptoms, impairment of the psychological structure of speech. Analysis of acoustic-mnesic aphasia. Localization, clini

Topic 4 Principles, methods, and techniques for examining people with aphasia.

Principles of examination: the principle of systematicity, the principle of interconnection with other aspects of mental development, and the principle of syndromic factor analysis. Requirements for specialist skills. Requirements for examination conditions. Requirements for defect analysis and topical diagnosis. Neuropsychological methods for studying higher mental functions and language.

Topic 5 Characteristics of techniques and methods for correcting efferent, afferent, and semantic aphasia

Characteristics of techniques and methods for correcting kinetic praxis disorders in patients with efferent aphasia. Formation of the component structure of words, coherent speech, and restoration of the grammatical structure of coherent speech. Correction of logical thinking through various methods of solving arithmetic problems and analyzing the content of texts. Characteristics of techniques and methods for correcting simultaneous synthesis disorders. Specifics of developing spatial praxis, the concept of number, and the general meaning of words. Features of correcting grammatical speech disorders in semantic aphasia include forming an understanding of complex speech constructions.

Topic 6 Characteristics of techniques and methods for correcting dynamic, acoustic-gnostic, and acoustic-mnesic aphasia

Restoration of speech and higher mental functions in dynamic aphasia. Characteristics of speech comprehension correction in patients with acoustic-gnostic aphasia: methods of eliminating logorrhea, techniques and methods of forming attention in patients to voiced speech, specifics of work on restoring comprehension of the meaning of words, phrases, and texts. Features of work on restoring writing and reading. Characteristics of the features of speech comprehension correction in patients with acoustic-mnesic aphasia: specifics of work on restoring understanding of the meaning of words, phrases, and texts. Features of correction in them auditory-speech memory. Features of correction of visual-objective, visual-spatial memory. Restoration of visual-speech memory, restoration of the mechanism of recalling words and images. Features of overcoming disorders of visual-figurative thinking. Methods for assessing speech dynamics. Tests for expressive speech. Tests for receptive speech. Factors affecting the effectiveness of restorative training.

Topic 7 Concept of primary progressive aphasia

Acquired cognitive disorders. Understanding dementia processes in the brain as a factor in speech disorders. Clinical forms of dementia. Rehabilitation work for primary progressive aphasia and other cortical function disorders.

Topic 8 Dysarthria in clinical medicine. Neurological basis of dysarthria. Classification of dysarthria. Rehabilitation of patients with various forms of dysarthria.

Dysarthria is a speech disorder caused by insufficient innervation of the speech apparatus. Forms of dysarthria: central and peripheral. Clinical and psychological characteristics of patients with dysarthria. Classification of dysarthria (bulbar, pseudobulbar, extrapyramidal or subcortical, cerebellar, cortical). System of rehabilitation work for dysarthria

Topic 9 Voice disorders in clinical practice. Principles of rehabilitation and recovery work.

Acoustic fundamentals of voice production. Voice development in children. General characteristics of voice disorders. Causes, mechanisms, and classification of voice disorders. Central and peripheral, organic, and functional voice disorders: aphonia, dysphonia. Methods of rehabilitation for voice disorders.

Topic 10 Speech disorders caused by combat operations. The concept of PTSD. Speech disorders in PTSD clinics. Means and methods of correction and rehabilitation treatment.

<p>Topic 11 Speech disorders in diseases of the maxillofacial apparatus</p> <p>Clinical manifestations of speech disorders in orthodontics and maxillofacial surgery. Clinic and methods of corrective and rehabilitative treatment.</p>
<p>Topic 12 Swallowing disorders in clinical practice</p> <p>Definition of dysphagia syndrome; main causes and manifestations of dysphagia syndrome (oropharyngeal, associated with neuromuscular disorders, various esophageal dysphagia – esophageal hiatal hernia, achalasia, GERD, mechanical narrowing (esophageal tumors)); know the symptoms of “red flags”;</p>
<p>Topic 13 Auxiliary methods of rehabilitation and recovery of speech disorders in clinical medicine. Speech therapy massage and articulation exercises. Taping in the rehabilitation of patients with speech disorders.</p> <p>The concept of speech therapy massage. Introduction to the concept of “kinesio taping.” Definition of kinesio taping, its place and significance in rehabilitation and speech therapy practice. The concept of kinesio taping. Taping in clinical practice. Introduction to the concept of “kinesio taping.” Definition of kinesio taping, its place and significance in rehabilitation. The concept of kinesio taping. Principles and methods of kinesio taping in rehabilitation.</p>
<p>Topic 14 Alternative communication methods for speech disorders</p> <p>Alternative and augmentative communication – application with children and adults. The concept of alternative and augmentative communication (AAC) – the “voice” of a person who is unable to speak. Scientific and evidence-based methods and techniques. Requirements for training specialists, practical application. Types, means, and rules for using AAC. Conditions for effective work in learning and using AAC.</p>
<p>Topic 15 Supporting patients and families during rehabilitation for speech disorders</p> <p>Social and psychological support for families of patients with speech disorders. Practical assistance. Development of visual aids and guidelines for families.</p>
<p>Topic 16 Practical skills and testing in the discipline “Clinical and neurological foundations of speech disorders. Diagnosis and methods of recovery”</p> <p>Practical skills and testing in the discipline “Clinical and neurological foundations of speech disorders. Diagnosis and methods of recovery”</p>
<p>Topic 17 Final control</p> <p>Differentiated credit</p>

5. Intended learning outcomes of the course

After successful study of the course, the student will be able to:

LO1	Apply acquired skills in practical situations. Learn the principles of diagnosis and differential diagnosis of speech disorders.
LO2	Justify the use of basic diagnostic methods for diagnosing swallowing disorders
LO3	Be able to determine rehabilitation tactics for various forms of speech disorders. Pharmacological methods in the treatment of speech and swallowing disorders.
LO4	Use professional vocabulary in practical activities

8. Teaching and learning activities

Topic 1. The history of the development of ideas about speech disorders
<p>pr.tr.1 "The history of the development of ideas about speech disorders" (full-time course)</p> <p>The concept of speech disorders. Comparison of domestic and Western classifications of speech disorders. The concept of higher cortical functions as the basis of speech. Speech as a component of higher nervous activity. Functional and socio-psychological causes of speech disorders. Critical periods in the development of a child's speech function. Factors that cause speech disorders (exogenous-organic, hereditary, social). Comparison of the causes of underdevelopment of children's speech and defects in established speech.</p>
Topic 2. Neuropsychological aspects of speech disorders in clinical medicine
<p>pr.tr.2 "Neuropsychological aspects of speech disorders in clinical medicine" (full-time course)</p> <p>Morphofunctional organisation and age norms for the development and changes in higher mental functions, the basics of the theory and practice of neuropsychological diagnosis of the state of development of higher mental functions, and the main directions of psychomotor and cognitive correction of higher mental functions in patients of different ages with speech disorders.</p>
Topic 3. Scientific and theoretical aspects of aphasia research. Etiopathogenesis of clinical forms of aphasia.
<p>pr.tr.3 "Scientific and theoretical aspects of aphasia research. Etiopathogenesis of clinical forms of aphasia." (full-time course)</p> <p>The concept of aphasiology. Current problems and prospects for development. The general psychological significance of aphasiology. The tasks of aphasiology. The current state, problems and sources of crisis in the modern stage of aphasiology. Contemporary scientific ideas about the genesis, structure and decay of higher cortical functions. The concept of a factor. The connection between aphasiology and psychology, neuropsychology, physiology, neurology and psycholinguistics. A new comprehensive scientific approach to the study of aphasia.</p>
<p>pr.tr.4 "Efferent motor aphasia. Localisation, central mechanism of impairment, clinical picture, impairment of the psychological structure of speech" (full-time course)</p> <p>Efferent motor aphasia. Localisation, central mechanism of impairment, clinical picture, impairment of the psychological structure of speech.</p>
<p>pr.tr.5 "Dynamic aphasia. Localisation, central mechanism of impairment, clinical picture, impairment of the psychological structure of language." (full-time course)</p> <p>Dynamic aphasia. Localisation, central mechanism of impairment, clinical picture, impairment of the psychological structure of speech. Analysis of afferent motor aphasia. Localisation, central mechanism of impairment, clinical picture, impairment of the psychological structure of speech.</p>
<p>pr.tr.6 "Afferent motor aphasia. Localisation, central mechanism of impairment, clinical picture, impairment of the psychological structure of speech." (full-time course)</p> <p>Principles of aphasia classification. Afferent motor aphasia. Localisation, central mechanism of impairment, clinical picture, impairment of the psychological structure of speech.</p>

<p>pr.tr.7 "Acoustic-gnostic aphasia. Localisation, central mechanism of impairment, clinical picture, impairment of the psychological structure of speech." (full-time course)</p> <p>Principles of aphasia classification. Acoustic-gnostic aphasia. Localisation, central mechanism of impairment, clinical picture, impairment of the psychological structure of speech.</p>
<p>pr.tr.8 "Acoustic-mnemonic aphasia. Localisation, central mechanism of impairment, clinical picture, impairment of the psychological structure of speech." (full-time course)</p> <p>Acoustic-mnemonic aphasia. Localisation, central mechanism of impairment, clinical picture, impairment of the psychological structure of speech.</p>
<p>pr.tr.9 "Amnesic semantic aphasia. Localisation, central mechanism of impairment, clinical picture, impairment of the psychological structure of language." (full-time course)</p> <p>Principles of aphasia classification. Localisation, central mechanism of impairment, clinical picture, impairment of the psychological structure of language</p>
<p>Topic 4. Principles, methods, and techniques for examining people with aphasia.</p>
<p>pr.tr.10 "Principles, methods and techniques for examining people with aphasia." (full-time course)</p> <p>Principles of examination: the principle of systematicity, the principle of interconnection with other aspects of mental development, the principle of syndromic factor analysis. Requirements for specialist skills. Requirements for examination conditions. Requirements for defect analysis and topical diagnosis. Neuropsychological methods for studying higher mental functions and language.</p>
<p>Topic 5. Characteristics of techniques and methods for correcting efferent, afferent, and semantic aphasia</p>
<p>pr.tr.11 "Characteristics of techniques and methods for correcting efferent, afferent, and semantic aphasia" (full-time course)</p> <p>Characteristics of techniques and methods for correcting kinetic praxis disorders in patients with efferent aphasia. Formation of the component structure of words, coherent speech, restoration of the grammatical structure of coherent speech. Correction of logical thinking through the use of various methods of solving arithmetic problems and analysing the content of texts. Characteristics of techniques and methods for correcting simultaneous synthesis disorders. Specifics of working on the development of spatial praxis, the concept of number, and the generalised meaning of words. Features of correcting grammatical speech disorders in semantic aphasia, forming an understanding of complex speech constructions.</p>
<p>Topic 6. Characteristics of techniques and methods for correcting dynamic, acoustic-gnostic, and acoustic-mnesic aphasia</p>

pr.tr.12 "Characteristics of techniques and methods for correcting dynamic, acoustic-gnostic, and acoustic-mnesic aphasia" (full-time course)

Speech and WPF recovery in dynamic aphasia. Characteristics of speech comprehension correction in patients with acoustic-gnostic aphasia: methods of eliminating logorrhea, techniques and methods of forming attention in patients to voiced speech, specifics of work on restoring the understanding of the meaning of words, phrases and texts. Features of work on restoring writing and reading. Characteristics of speech comprehension correction in patients with acoustic-mnesic aphasia: specifics of work on restoring understanding of the meaning of words, phrases and texts. Features of correction of auditory-verbal memory in these patients. Features of correction of visual-objective and visual-spatial memory. Restoration of visual-speech memory, restoration of the mechanism of recalling words and images. Features of overcoming visual-figurative thinking disorders. Methods for assessing speech dynamics. Tests for expressive speech. Tests for receptive speech. Factors affecting the effectiveness of restorative training.

Topic 7. Concept of primary progressive aphasia

pr.tr.13 "Concept of primary progressive aphasia" (full-time course)

Acquired cognitive disorders. Understanding dementia processes in the brain as a factor in speech disorders. Clinical forms of dementia. Rehabilitation work for primary progressive aphasia and other cortical function disorders.

Topic 8. Dysarthria in clinical medicine. Neurological basis of dysarthria. Classification of dysarthria. Rehabilitation of patients with various forms of dysarthria.

pr.tr.14 "Dysarthria in clinical medicine. Neurological basis of dysarthria. Classification of dysarthria. Rehabilitation of patients with various forms of dysarthria." (full-time course)

Dysarthria as a disorder of speech articulation caused by insufficient innervation of the speech apparatus. Forms of dysarthria: central and peripheral. Clinical and psychological characteristics of patients with dysarthria. Classification of dysarthria (bulbar, pseudobulbar, extrapyramidal or subcortical, cerebellar, cortical). System of rehabilitation for dysarthria.

Topic 9. Voice disorders in clinical practice. Principles of rehabilitation and recovery work.

pr.tr.15 "Voice disorders in clinical practice. Principles of rehabilitation and recovery work." (full-time course)

Historical and contemporary aspects of voice disorders. Classification of voice disorders and examination of the vocal apparatus and vocal function. Rehabilitation techniques for voice disorders.

Topic 10. Speech disorders caused by combat operations. The concept of PTSD. Speech disorders in PTSD clinics. Means and methods of correction and rehabilitation treatment.

<p>pr.tr.16 "Speech disorders caused by combat operations. The concept of PTSD. Speech disorders in PTSD clinics. Means and methods of correction and rehabilitation treatment." (full-time course)</p> <p>Working with individuals with post-traumatic stress disorder (PTSD). Post-traumatic stress disorder (PTSD): manifestations, warning signs and symptoms that are not observed in a typical response to stress (children, adults). Cases in which a specialist has the right to refuse, terminate or suspend work with a person. Features of working with children. Cooperation with the child's parents, involvement in active participation. Stress resistance, resourcefulness of the specialist, care for their own health.</p>
<p>pr.tr.17 "Emotional burnout. Preserving and maintaining your own resourcefulness" (full-time course)</p> <p>Causes of emotional burnout. Maintaining balance in your body and areas of life. Stress. Overcoming the effects of stressful situations at work. First aid for stress – self-help</p>
<p>Topic 11. Speech disorders in diseases of the maxillofacial apparatus</p>
<p>pr.tr.18 "Speech disorders in diseases of the maxillofacial apparatus" (full-time course)</p> <p>Clinical manifestations of speech disorders in orthodontics and maxillofacial surgery. Clinic and methods of corrective and rehabilitative treatment.</p>
<p>Topic 12. Swallowing disorders in clinical practice</p>
<p>pr.tr.19 "Swallowing disorders in clinical practice" (full-time course)</p> <p>Definition of dysphagia syndrome; main causes and manifestations of dysphagia syndrome (oropharyngeal, associated with neuromuscular disorders, various oesophageal dysphagia – oesophageal hiatal hernia, oesophageal achalasia, GERD, mechanical narrowing (oesophageal tumours)); knowing the symptoms of ‘red flags’; Features of rehabilitation work for dysphagia of various aetiologies.</p>
<p>Topic 13. Auxiliary methods of rehabilitation and recovery of speech disorders in clinical medicine. Speech therapy massage and articulation exercises. Taping in the rehabilitation of patients with speech disorders.</p>
<p>pr.tr.20 "Taping in the rehabilitation of patients with speech disorders." (full-time course)</p> <p>Introduction to the concept of kinesio taping. Definition of kinesio taping, its place and significance in rehabilitation. The concept of kinesio taping. Principles and methods of kinesio taping in rehabilitation.</p>
<p>pr.tr.21 "The concept of speech therapy massage" (full-time course)</p> <p>Introduction to the concept of kinesio taping. Definition of kinesio taping, its place and significance in rehabilitation and speech therapy practice. The concept of kinesio taping.</p>
<p>Topic 14. Alternative communication methods for speech disorders</p>

<p>pr.tr.22 "Alternative communication methods for speech disorders" (full-time course)</p> <p>Alternative and augmentative communication – application with children and adults. The concept of alternative and augmentative communication (AAC) – the ‘voice’ of a person who is unable to speak. Scientific and evidence-based methods and techniques. Requirements for training specialists, practical application. Types, means, rules for using AAC. Conditions for effective work in learning and using AAC.</p>
<p>Topic 15. Supporting patients and families during rehabilitation for speech disorders</p>
<p>pr.tr.23 "Supporting patients and families during rehabilitation for speech disorders" (full-time course)</p> <p>Social and psychological support for families of patients with speech disorders. Practical assistance. Development of visual aids and guidelines for families.</p>
<p>Topic 16. Practical skills and testing in the discipline “Clinical and neurological foundations of speech disorders. Diagnosis and methods of recovery”</p>
<p>pr.tr.24 "Practical skills and testing in the discipline “Clinical and neurological foundations of speech disorders. Diagnosis and methods of recovery”" (full-time course)</p> <p>Practical skills and testing in the discipline “Clinical and neurological foundations of speech disorders. Diagnosis and methods of recovery”</p>
<p>Topic 17. Final control</p>
<p>pr.tr.25 "Final control" (full-time course)</p> <p>Differential credit</p>

9. Teaching methods

9.1 Teaching methods

Course involves learning through:

TM1	Case-based learning
TM2	Team Based Learning
TM3	Practical training
TM4	Electronic learning
TM5	Self-study

The discipline provides students with the ability to abstract thinking, analysis and synthesis; ability to apply knowledge in practical situations; ability to make informed decisions; ability to learn, master modern knowledge and apply it in practical situations.

The discipline provides mastery of soft skills such as: • Ability to think abstractly, analyse and synthesise. • Ability to learn, acquire modern knowledge and apply it in practical situations. • Knowledge and understanding of the subject area and understanding of professional activities. • Ability to make informed decisions; work in a team; interpersonal skills. • Ability to use information and communication technologies. • Determination and perseverance in relation to assigned tasks and responsibilities.

9.2 Learning activities

LA1	Electronic learning in systems (MIX.sumdu.edu.ua)
LA2	performing practical tasks
LA3	Analysis and discussion of cases (educational/practical/research)
LA4	Self-study
LA5	Work with textbooks and relevant information sources

10. Methods and criteria for assessment

10.1. Assessment criteria

Definition	National scale	Rating scale
Outstanding performance without errors	5 (Excellent)	$170 \leq RD \leq 200$
Above the average standard but with minor errors	4 (Good)	$164 \leq RD < 169$
	4 (Good)	$140 \leq RD < 163$
Fair but with significant shortcomings	3 (Satisfactory)	$127 \leq RD < 139$
	3 (Satisfactory)	$120 \leq RD < 126$
Fail – some more work required before the credit can be awarded	2 (Fail)	$70 \leq RD < 119$
	2 (Fail)	$0 \leq RD < 69$

10.2 Formative assessment

	Description	Deadline, weeks	Feedback
FA1 Discussed self-correction of Wicon work by students	Partnership interaction aimed at improving the results of educational activities by comparing one's own current level of success with previous indicators. Provides an opportunity to analyze one's own educational activities	During the entire period of studying the discipline	Teacher's oral comments
FA2 Solving situational tasks	The case method makes it possible to reveal and form the qualities and abilities of medical students necessary for further work, forms clinical thinking, analytical abilities, independence in decision-making, communication, skills for working with a sufficiently large amount of information	Assessment of the student's ability to think clinically, justify their decisions	Teacher's oral comments

FA3 Survey and teacher's oral comments based on his results	It provides an opportunity to identify the state of educational experience acquired by students in accordance with the set goals, to find out the prerequisites for the state of formation of the obtained results, the causes of difficulties, to adjust the learning process, to track the dynamics of the formation of learning results and to forecast their development.	During the entire period of studying the discipline	According to the obtained data on the results of training, based on their analysis, it is proposed to determine the evaluation as an indicator of the achievements of the educational activities of the applicants
FA4 Checking and evaluating written assignments	A method of effective verification of the level of assimilation of knowledge, abilities and skills from each subject of an educational discipline. Testing allows you to check the assimilation of educational material from each subject	During the entire period of studying the discipline	According to the obtained data on the results of training, based on their analysis, it is proposed to determine the evaluation as an indicator of the achievements of the educational activities of the applicants
FA5 Express testing	A method of effective verification of the level of assimilation of knowledge, abilities and skills from each subject of an educational discipline. Testing allows you to check the assimilation of educational material from each subject	During the entire period of studying the discipline	According to the obtained data on the results of training, based on their analysis, it is proposed to determine the evaluation as an indicator of the achievements of the educational activities of the applicants

10.3 Summative assessment

	Description	Deadline, weeks	Feedback
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SA1 Differentiated scoring	Candidates who have successfully mastered the material from the discipline are allowed to take the test	In the last discipline lesson	The winner can get 80 points for differential credit. The minimum number of points a student must receive is 48 points
SA2 Final testing	A method of effective verification of the level of assimilation of knowledge, abilities and skills from an educational discipline. Testing allows you to check the results of training during the cycle and determine the level of knowledge at the end of the discipline.	Final computer test at the end of the course (10 points)	It is an admission to the preparation of the credit
SA3 Solving a clinical case	It involves demonstrating the ability to think clinically, analyze a practical situation, and make decisions independently	According to schedule	It is an admission to the preparation of the credit
SA4 Current evaluation of the level of theoretical and practical training	Involves demonstrating the ability to analyse literary sources and practical situations, and draw conclusions.	During the entire period of studying the discipline	Є допуском до складання заліку

Form of assessment:

		Points	Можливість перескладання з метою підвищення оцінки
The first semester of teaching		100 scores	
SA1. Differentiated scoring		70	
		70	Yes
SA2. Final testing		10	
		10	Yes
SA3. Solving a clinical case		10	
		10	Yes
SA4. Current evaluation of the level of theoretical and practical training		10	
		10	No

Grade in the discipline is defined as the sum of points for current educational activities (not less than 72) and points for the final module control (not less than 48). The number of points for the

current activity is calculated by the formula $100 \times \text{the arithmetic mean of the student's success in the 4-point grading system} / 5$. The student receives a maximum of 10 points for solving a clinical case. The minimum number of points that a student must receive is 6 points. For the defense of the presentation the student receives a maximum of 10 points, a minimum of 6. The student is admitted to the test subject to the requirements of the curriculum and if for the current educational activity he scored at least 72 points: 60 points during practical classes, 6 points for defense presentations and 6 points for solving a clinical case. The final module control is conducted at the end of the semester in the form of a written test, with a score of "5" corresponds to 80 points, "4" - 64 points, "3" - 48 points, "2" - 0 points. In case of unsatisfactory result for the final module control, the student has the right to retake the test. Students who fail to take the test without good reason are considered to have received an unsatisfactory grade. The student's refusal to perform the final modular task is certified as an unsatisfactory answer.

11. Learning resources

11.1 Material and technical support

MTS1	In case of quarantine restrictions, the grading is carried out on-line using the platform Mix.sumdu.edu.ua, Zoom, Google meet.
MTS2	Software (use of the training platform Mix.sumdu.edu.ua, in special cases of the platforms Google meet, Zoom)
MTS3	Information and communication systems, computers, computer systems and networks, projection equipment
MTS4	Sumy Regional Clinical Hospital, 4th Munitipal Clinical Hospital

11.2 Information and methodical support

Essential Reading	
1	Clinical Neurology: посібник / V. F. Gryb, O. O. Doroshenko, S. I. Genyk, T. D. Hrytsiuk. – K.: Medknyha, 2020. – 288 p.
2	Neurology: textbook / I. A. Hryhorova, L. I. Sokolova, R. D. Herasymchuk etc.; ed.: I. A. Hryhorova, L. I. Sokolova. – K.: Medicine Publishing, 2022. – 624 p.
3	Neurosurgery. - 2nd type. // Tsymbalyuk VI. - Vinnytsia : Nova Kniga, 2020.— 360 p..
Supplemental Reading	
1	Topical Diagnosis in Neurology / P. Duus. - Thieme, 2021. - 517 p.
2	How to Examine the Nervous System / R.T. Ross. - Humana Press Inc., 2018. - 242 p.
Web-based and electronic resources	
1	National Aphasia association https://aphasia.org/
2	American aphasia association
3	Australian aphasia association
4	www.aphasiasupport.org