Approved by Council meeting of the Faculty Medicine No.2, Protocol №___ of___________________

The Dean of the Faculty Medicine No.2
Dr., associate professor ___________ M. Betiu

Approved at the Department of Neurology meeting
Protocol №___ of___________________

Head of the Department,
Dr., professor ___________ M. Gavriliuc

SYLLABUS FOR STUDENTS
FACULTY MEDICINE No.2

Course title: **Neurology**
Course code: **C.01.O.002, C.02.O.002**
Type of course: **Compulsory**

**Total hours - 105 hours**
including course - 30 hours, practical classes - 75 hours

Number of credits allocated to course: **5**
Names of the authors who teach course units: **dr., professor Mihail Gavriliuc**
**dr., professor Ion Moldovanu**
**dr., academician Diomid Gherman**
**dr., professor Vitalie Lisnic**

Chişinău 2013
**The purpose of discipline Neurology:**

Studying the physiological and pathological changes in the nervous system depending on the relationship between neural substrate and causal factor, relevant multilateral examination of the relationship between the structure and internal organization of the nervous system, the interrelation of clinical syndromes and topical diagnosis.

**Training objectives within the discipline Neurology:**

**The level of knowledge and understanding**

- To define the theoretical bases of contemporary neuroscience;
- To identify the anatomical and functional peculiarities of the nervous system;
- To highlight the topographic location and role of different structures, formations and areas of the nervous system in performing specific functions and neurological syndromes as a whole;
- To establish the topical diagnosis of lesions of the nervous system based on defined clinical syndromes;
- To report about etiopathogenesis, clinical manifestations, diagnosis, treatment and prevention of common nervous system diseases.

**The level of application**

- To perform collection of anamnesis and evaluation history data of the nervous system functions;
- To perform specific neurological examination on the systems;
- To apply diagnostic methods in neurological diseases;
- To analyze tests and clinical results, additional diagnostic investigations to assess the functional status of the nervous system;
- To apply the methods of examination on patients with neurological emergencies.

**The level of integration**

- To appreciate the importance of neuroscience in the context of Medicine and related medical disciplines integration;
- To assess the evolution of physiological processes and the etiology of pathological processes of the nervous system;
- To supervise pathological processes and to use investigation, treatment and prevention methods of the nervous system diseases;
- To assess the diagnostic methods results in neurological diseases;
- To take optimal decisions in emergency aid in critical situations;
- Develop research projects in the field of neuroscience.

**Conditioning and prior requirements:**

Clinical neurology is a medical discipline, which at university studying allows to create the necessary skills to support a diagnosis based on history, clinical and laboratory examination, to acquire the concepts and skills necessary to highlight neurological emergency cases and frequent neurological diseases, and to decide an appropriate curative management.

Fundamental knowledge obtained studying basic subjects such as anatomy, physiology, pathophysiology, biochemistry and others is needed to good acquire of the discipline.
### The basic content of the course:

#### A. Lectures:

<table>
<thead>
<tr>
<th>No.</th>
<th>Subjects</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Introduction to clinical neuropsychology. The major syndromes: aphasia, apraxia, agnosia. The semiology of brain damage. Dementias.</td>
<td>2</td>
</tr>
<tr>
<td>8.</td>
<td>Ischemic and hemorrhagic stroke: clinical manifestations, diagnosis, the treatment in acute and recuperation period.</td>
<td>2</td>
</tr>
<tr>
<td>10.</td>
<td>Multiple sclerosis and other demyelinating diseases of the nervous system. Neurosyphilis. Disturbances of the nervous system in AIDS. Neurological manifestations of somatic diseases.</td>
<td>2</td>
</tr>
<tr>
<td>11.</td>
<td>Intracranial hypertension syndrome. Brain and spinal cord tumors. Paraneoplastic neurological syndromes. Traumatic injuries of the head.</td>
<td>2</td>
</tr>
<tr>
<td>12.</td>
<td>Epilepsy. Cerebral palsy.</td>
<td>2</td>
</tr>
<tr>
<td>14.</td>
<td>Spinal cord disorders: myelitis, poliomyelitis, spinal ischemic stroke, chronic vascular myelopathy. Spinal cord injuries.</td>
<td>2</td>
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</table>

#### B. Practical lessons:

<table>
<thead>
<tr>
<th>No.</th>
<th>Subjects</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Pyramidal system. The anatomical and physiological peculiarities of pyramidal tract. The central and peripheral paresis and paralysis. Examination methods of the pyramidal system. Motor neuron disease.</td>
<td>5</td>
</tr>
<tr>
<td>3.</td>
<td>Extrapyramidal system and cerebellum. The anatomical and physiological peculiarities of extrapyramidal system. Hypotonic-hyperkinetic and hypertonic-hypokinetic syndromes. Types of hyperkinesis. Signs of damage and methods of examination of the extrapyramidal system and cerebellum.</td>
<td>5</td>
</tr>
<tr>
<td>8.</td>
<td>Ischemic and hemorrhagic stroke: clinical manifestations, diagnosis. Importance of complementary diagnostic methods in the diagnosis of stroke: CT, MRI, angio-CT, angio-MRI, conventional angiography, carotid ultrasonography. The stroke treatment in acute and recuperation period.</td>
<td>5</td>
</tr>
<tr>
<td>10.</td>
<td>Multiple sclerosis and other demyelinating diseases of the nervous system. Neurosyphilis. Disturbances of the nervous system in AIDS. Neurological manifestations of somatic diseases.</td>
<td>5</td>
</tr>
<tr>
<td>12.</td>
<td>Epilepsy and seizures syndromes: clinical manifestations, diagnosis and principles of</td>
<td>5</td>
</tr>
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treatment. Perinatal pathology of the nervous system. Cerebral palsy.


**Totalizing practical lesson. Practical skills exam.**

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**Recommended bibliography:**

**A. Mandatory:**


**B. Additional reference:**


**Teaching and learning methods used:**

The discipline of Neurology is taught in traditional manner: with lectures and practical work. The lecturers will read the theoretical materials during the course. Course topics of the lectures will include key elements of semiological orientation based on symptoms and signs, presentation of some methodologies and techniques for examining the neurological patient. There will also be reflected the most important and current issues of neurology regarding the etiology, classification, pathogenetic mechanisms, clinical features, diagnosis, including differential diagnosis, treatment and prevention of neurological diseases.

These issues will be discuss during the practical lessons and students' knowledge gained in the lectures, as well as by studying textbooks, methodological recommendations and recommended
additional literature will be test. Great importance will be given to the patients’ clinical examination and the learning of the methodology of the neurological examination of the patient. In the discussion of the analyzed patients there will be evaluated additional investigations data (radiographies, CT and MRI imaging, CSF examination etc). Special attention will be given to students working independently with patients.

Suggestions for individual activity:

The self-training and self-education of students is done in different ways depending on the objectives or the proposed tasks, but also on the level of training and education in the respective domain.

An important method of self-training is reading. Reading is a research, an investigation that also assimilates the content of a book, a paper. Understanding the proposed syllabus is based on the correct decoding of the message by perception, analysis, synthesis, generalization and application of the studied material. Reading also involves individual expression, which signifies a difficult personal effort using the maximum tension forces. To achieve the proposed objectives, individual study needs certain conditions: traditional means - pencil and paper, advanced techniques (Internet, etc) and lecture notes. Therefore we recommend effective study techniques:

1. Read original material, but don’t simply scheme the text on the diagonal. Make notes. Try to formulate by yourself the important moments. Study the diagrams and pictures from the book and the notebook.
2. Come to courses and practical lessons, but not to make attendance! If you do otherwise, you will unlikely meet the requirements. Make notes carefully. Process the information and ask yourself: Do you agree with the teacher? Do you understand what it is speaking about? Does the taught material corresponds with that from the textbook?
3. Ask questions! Teacher, each other, yourselves. In the hall, in the classroom, in the hallways, teachers' offices. Asking questions means that you try to understand and process the material taught and that can only be welcomed.
4. Get organized in groups of 2-3 students to meet regularly for discussions on course material and prepare for tests. Usually in small working groups a much broader and clearer understanding is synthesized than working individually. In addition, the ability to explain the learnt material to colleagues will be a very useful skill for the future.
5. Use time reasonably. The discipline of neurology forwards high requirements, as well as all the fundamental or clinical disciplines taught. Therefore, you will have to manage your time rationally and find the perfect balance between the effort you put in to obtain knowledge, other responsibilities and personal life. According to current requirements, for each hour of work in direct contact with the teacher, the student must work individually 1-2 hours. In other words, for sufficient assimilation of the subject you should work individually at least 5 hours per week.

Assessment methods:

During the school year, for the discipline of neurology, there are 15 control works using tests developed in the course topics and 2 Aggregation (formative assessment): Semiology of the nervous system and nervous system diseases.

Thus, formative assessment consists of 15 total tests. Each test is marked independently with marks from 10 to 0. Each test can be taken 2 times. Annual average is formed from the sum of points accumulated during the study year and divided by 15.

Formative assessment tests are based on the textbook "Self evaluation and self control to Neurology and Neurosurgery" developed by the Neurology Department. The tests include questions with
a single correct answer and questions with 2-4 correct responses (multiple choice), seeking to prepare for passing the exam at the discipline of neurology. The student is provided with a total of 30 minutes to answer the test. The evaluation is performed according to the criteria of consistency system (option "Test Editor" SMFU "Nicolae Testemitanu").

Students whose annual average is below grade 5, as well as the students who have not recovered the practical work absences, shall not be allowed to the promotion exam at the discipline of Neurology.

The exam at the discipline of Neuology (summative evaluation) consists of three tasks: simple and multiple-choice test (option "Test Editor" Medical University "Nicolae Testemitanu"), verbal task and practical skills.

The test task consists of 100 tests options from all topics of Neurology, 40 tests are simple choice, 60 multiple choice tests. The student is provided with a total of 2:00 astronomical hours to answer the tests. The task is marked with grades from 10 to 0.

The verbal task consists of three questions on topics of the studied discipline. The task is marked with grades from 10 to 0.

The "Practical skills" task is taken at the end of the module in the semester of studying. The task is marked with grades from 10 to 0.

Topics for exams (tests and questions) are approved at the department meeting and are presented to the students at least one month before the session.

For the test to be considered passed, the student must achieve at least grade 5 at each task, otherwise the exam is not passed.

The final grade consists of 4 components: annual average mark (coefficient 0.3), practical dexterity (coefficient 0.2), oral test (coefficient 0.3), written test (coefficient 0.2).

Failure to attend the examination without valid reason shall be recorded as "absent" and is equivalent to grade 0 (zero). The student is entitled to 2 repeated tries of the failed exam.

Language of instruction:

Romanian, Russian, English, French