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ACADEMIC STANDARD FOR THE DISCIPLINE
"NEUROSURGERY"

1. Purpose of training in the discipline

The main goal of training in **NEUROSURGERY** is the theoretical and practical preparation of future physicians for comprehensive care of patients with neurosurgical diseases, including acquiring skills to assess the need for specialized consultative neurosurgical assistance and to refer patients for emergency hospitalization in a hospital for active treatment, as well as to conduct ongoing treatment.

The objectives are aligned with:

1. the mission and concept of the university
2. the scope and credit rating of the discipline (according to the ECTS system), as indicated in the curriculum
3. the qualification characteristics of the specialty
4. the educational degree (Master – Physician)

The goal is consistent with the place of the discipline in the specialty in terms of importance and chronology in the curriculum.

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2. Educational content of the discipline

The content of the lecture and practical exercise topics is arranged chronologically so that each subsequent lecture and the related exercises build on already studied material and concepts. Unnecessary overlap or the existence of "gaps" between "related" disciplines in the curriculum is avoided.

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3. Prerequisites

The student must possess basic knowledge of anatomy, physiology, pathoanatomy, pathophysiology of the nervous system, and the main methods for examination of neurological status.

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4. Academic resources

The academic staff of the Department of Neurosurgery includes 2 habilitated lecturers with the scientific degree "Doctor", 7 non-habilitated lecturers, three of whom are chief assistants with a doctoral degree; 6 have acquired a specialty in neurosurgery.

Lectures are delivered by a habilitated lecturer (associate professor or professor) with a doctoral degree in the respective doctoral program. Up to 10% of the lectures may also be assigned to a non-habilitated lecturer holding a scientific degree in the respective doctoral program.

Practical exercises are conducted by habilitated and non-habilitated lecturers (professor, associate professor, chief assistant, assistant). Non-habilitated lecturers hold a Master's degree in Medicine and are appointed after a competition.

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5. Material resources

For the training of students and doctoral candidates, 2 (two) seminar rooms equipped with multimedia and neuroimaging presentation equipment are used.

The technical means used in training include video films, multimedia presentations, and collections of computed tomography and magnetic resonance images covering a wide range of neurosurgical pathology.

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6. Lecture training

Lectures are prepared and delivered by habilitated lecturers in the form of multimedia presentations in Bulgarian and English. The volume and format of the lectures are determined by the individual lecturers and are updated annually.

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7. Practical exercises

They are conducted in groups. Methodological guidelines and manuals are provided for the exercises. Independent tasks are assigned to each student in the form of preparing a report on a given topic related to the exercises.

The following are assessed:

1. the student's self-preparation for the topic of each exercise
2. the results (acquired knowledge and skills) from each specific exercise through solving clinical cases

As a methodological approach, priority is given to the independent work of each student. Discussions are held with groups of students, where the presenting student substantiates their thesis regarding specific clinical cases.

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8. Information resources. Main literature. Websites

All lecturers have plans for the developed lectures and exercises in the discipline and, upon request from students, provide additional teaching materials.

At the beginning of each academic year, the list of the main recommended literature for the discipline is updated. During the educational process, lecturers and assistants also recommend internet resources from which appropriate materials for student preparation can be found.

Textbooks

Main for medical students

1. Fundamentals of Neurosurgery (Ed. B. Kitov). Medical Publishing House VAP, Plovdiv, 2012, ISBN 978-954-8326-64-3
2. Fundamentals of Neurosurgery. Edited by B. Kitov. Publishing house "LAX BOOK", Plovdiv, 2014. ISBN 978-954-8326-91-9
3. Kitov B., Karamanlieva Ts., Kitova T. Clinical Neuroanatomy. Publishing house "LAX BOOK", Plovdiv, 2013, p. 335, ISBN 978-954-8326-87-2
4. Clinical Neuroanatomy. Edited by B. Kitov. Publishing house "LAX BOOK" Ltd., Plovdiv, 2018. ISBN 978-619-189-079-8
5. Atlas of the Human Brain. Edited by B. Kitov. Publishing house "LAX BOOK", Plovdiv, 2015. ISBN 978-619-189-028-6

Additional

1. "Neurosurgery" edited by Corr. Member Prof. Dr. Nikolay Gabrovski. Bulgarian Academy of Sciences Publishing House "Prof. Marin Drinov".
2. Neurosurgery. In: Neurosurgery, ed. A. Kirkeselyan, Publishing house "Znanie" Ltd., Sofia, 2000, p. 302
3. Neurological Surgery, IV edition, (Editor Youmans JR), Vol. I–V, H. Richard, 2003.
4. Handbook of Neurosurgery, 7th Edition, Editor: Greenberg MS, Thieme Medical Publishers, New York, 2010.

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9. Control and assessment

1. questioning during each exercise and ongoing assessment
2. test solving of a real clinical case after each exercise
3. annual exam: written and final oral examination, which includes solving a clinical case related to the drawn question by the student

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10. Independent preparation and extracurricular work of the student

Independent work is guided by the assistant, who directs the student both regarding literature sources and methods of their assimilation. Training tests, including online ones, are also provided for independent work and exercises.

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11. Collaboration between lecturers and students

This collaboration is expressed in:

1. the lecturer's engagement with the student and their prior preparation, assistance in overcoming current difficulties in mastering the material, and opportunities for an individual training program to achieve better results
2. use of consultation hours
3. involving students in teams for scientific tasks, research, and preparation and presentation of scientific reports and publications

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12. Exams

The ongoing grades provided in the curriculum of the discipline are given for:

1. the student's performance in seminar exercises, solving clinical cases, preparing reports on a given topic, etc.

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13. Assessment standards

The successful study of the discipline neurosurgery is evaluated as a set of grades distributed in two main components:

The first is the assessment of the student's academic activity during the respective semester, including grades from ongoing control and the level of quality execution of the forms of independent work provided in the curriculum.

The second includes the result from the written and oral exam (or test examination held in person) in neurosurgery within the annual semester exam in Specialized Surgeries.

Clear grading standards have been developed. An average grade is formed from the student's performance during seminar exercises and the semester written and theoretical exam.

Poor (2) is given to a student with insufficient knowledge that cannot serve as a basis for further learning in other clinical disciplines.

Average (3) is given to a student who reproduces knowledge in a "ready-made scheme", lacking key elements and readiness for independent use of knowledge and professional skills; terminology is insufficiently mastered; expression is poor; only some basic practical skills are acquired.

Good (4) is given to a student who develops the topic descriptively and reproductively, has limited independence, and makes inaccuracies; basic practical skills are acquired but not fully.

Very Good (5) is given to a student who develops the topic independently and productively, analyzes data, and performs very well practically with minimal omissions.

Excellent (6) is given to a student who independently, logically, and creatively presents the topic; uses and interprets literature in an original way; is highly informed and ready to apply knowledge and professional competencies; demonstrates excellent practical performance.

At the beginning of the academic year, students are informed about the assessment standards, procedures, and feedback opportunities.

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14. Formation of the final grade

The final grade determines the extent to which the student has achieved the learning objectives set at the beginning of the semester. It is multi-component and includes grades from seminar exercises and the the written and oral exam (or in-person test examination). If the final exam grade is Poor (2), the final grade is necessarily Poor (2).

The components and their weighting coefficients are determined by the Academic Council.

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15. Documentation, storage of results, and control of assessment activities

1. Students have the right and obligation to be informed about the regulations, procedures, and results, and to submit claims and complaints in case of violations.
2. This right applies in cases of technical errors or discrepancies between demonstrated knowledge and the assigned grade.
3. Corrections of grades may be made only by the course holder.
4. Disputes are submitted in writing and must be answered by the evaluation team by the end of the next working day.
5. Serious violations may be reported to the Vice-Rector for Quality.

Exam materials are stored and made accessible to students for review within no more than 3 working days after the exam.

The course description is provided at the beginning of training in accordance with the Higher Education Act.

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