

**DESCRIPTION OF COURSE UNIT FOR DOCTORAL STUDIES  
AT VILNIUS UNIVERSITY**

<b>Scientific Area/eas, Field/ds of Science</b>	Medical and Health Sciences (M 000): Medicine (M 001); Public Health (M 004); Nursing (M 005)			
<b>Faculty, Institute, Department/Clinic</b>	Faculty of Medicine Institute of Clinical Medicine Clinic of Neurology and Neurosurgery			
<b>Course unit title</b> (ECTS credits, hours)	<b>Neurooncology</b> 7 credits (189 h)			
<b>Study method</b>	<b>Lectures</b>	<b>Seminars</b>	<b>Consultations</b>	<b>Self-study</b>
Number of ECTS credits	-	-	1	6
<b>Method of the assessment</b> (in 10 point system)	<p><b>Exam.</b> Exams are conducted in written and oral forms. Two questions on the topics given in the course unit description are asked by the commission. The doctoral student is given time to prepare a written answer. Answers are given orally. The maximum score for each question is 5 points, the total score is the sum of the scores for both questions, rounded to the nearest whole number. The depth of knowledge of the topic, the application of the latest knowledge, the ability to present and discuss it are assessed.</p>			
<b>PURPOSE OF THE COURSE UNIT</b>				
Acquire basic knowledge of the epidemiology, manifestation, diagnosis, conservative and surgical treatment, prognosis of brain and spinal cord tumors.				
<b>THE MAIN TOPICS OF COURSE UNIT</b>				
<p>Epidemiology, etiopathogenesis of brain and spinal cord tumors. World Health Organization classification of brain tumors. Histological classification of brain tumors. Tumor genetics. Cerebral edema, etiopathogenesis, clinical symptoms, diagnosis. Dislocations and herniations of the brain and brainstem structures. Differential diagnosis of brain herniations. Radiological examination of brain tumors. Methods of evaluation and correction of intracranial pressure in neurooncology. Topics of glial tumors, early and late tumor symptoms. Manifestation of temporal lobe tumors. Manifestation of frontal lobe tumors. Manifestation of occipital lobe tumors. Manifestation of parietal lobe tumors. Principles of surgical treatment of glial tumors. Palliative surgery. Anatomical and histological classification of meningiomas. Manifestation of parasagittal, interhemispheric fissure meningiomas. Manifestation of skullbase meningiomas. Surgical treatment of meningiomas. Classification of meningioma extent of resection. Manifestation of cerebellar vermis tumors. Manifestation of cerebellar hemisphere tumors. Manifestation of pons, medulla oblongata tumors. Tumors of the cerebellopontine angle: neurinomas, meningiomas, cholesteatomas. Principles of cerebellar glial tumors treatment. Characteristics of pediatric neurooncology. Principles of brainstem tumors surgery. Methods of surgical treatment of cerebellopontine angle tumors. Pituitary adenomas, their types, manifestation, diagnosis. Craniopharyngioma, manifestation, diagnosis. Indications for surgical treatment of pituitary tumors. Hormonal, radiological, surgical treatment. Endonasal surgery for pituitary tumors. Etiology and manifestation of metastatic brain tumors. Principles of surgical treatment of metastatic brain tumors. Non-surgical treatment of metastatic brain tumors. Complex treatment of brain tumors. Stereotactic radiosurgery. Prognosis of brain tumors, rehabilitation of patients, expertise of working capacity. Results, prognosis, expertise of working capacity of posterior cranial fossa tumors treatment. Prognosis of pituitary tumors, rehabilitation of patients, expertise of working capacity. Manifestation of spinal and</p>				

spinal cord tumors. Radiological examination of spinal and spinal cord tumors. Principles of spinal tumor surgical treatment. Principles of intradural extramedullary tumor surgical treatment. Principles of intradural intramedullary tumor surgical treatment. Outcomes and prognosis of spinal tumors treatment. Outcomes and prognosis of intradural spinal cord tumors treatment.

### **RECOMMENDED LITERATURE SOURCES**

1. Winn H. (ed). Youmans and Winn Neurological Surgery. 8th edition. Elsevier, 2022
2. Quinones-Hinojosa A (ed.). Schmidek&Sweet operative neurosurgical techniques: indications, methods, and results. 7th edition. Elsevier. 2021.
3. Budrys V (red.). Klinikinė neurologija. 2as leidimas. Vaistų žinios. 2009.
4. Budrys V. Urgentinė neurologija. Vilnius: Vaistų žinios, 2011
5. Greenberg MS (ed). Handbook of neurosurgery, 9th edition. Thieme. New York. 2019.
6. Draf W, Carrau RL, Bockmuhl U, Kassam AB, Vajkoczy P. (eds). Endonasal endoscopic surgery of skull base tumors: an interdisciplinary approach. Thieme. 2015
7. Ozek MM, Cinalli G, Maixner W, Sainte-Rose Ch. (eds). Posterior fossa tumors in children. Springer. 2015
8. Sughrue ME (ed). The Glioma Book. Thieme. 2019
9. Cappabianca P (ed). Meningiomas of the Skull Base. Treatment Nuances in Contemporary Neurosurgery. Thieme. 2019.
10. Couldwell WT (ed). Skull Base Surgery of the Posterior Fossa. Springer. 2018

### **CONSULTING LECTURERS**

1. Coordinating lecturer: Saulius Ročka (Prof. Dr.).
2. Robertas Kvaščevičius (Assist. Prof. dr.).
3. Aidanas Preikšaitis (Assist. Prof. dr.).

### **APPROVED:**

By Council of Doctoral School of Medicine and Health Sciences at Vilnius University:  
29<sup>th</sup> of September 2022

Chairperson of the Board: Prof. Janina Tutkuvienė