**SYLLABUS**

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| **Name of a course/module** |  |
| **Faculty of**  | **Medicine with Division of Dentistry and Division of Medical Education in English** |
| **Name** **of a field of study** | Neurosurgery |
| **Level of education** |  |
| **Form of study** | stationary |
| **Language of instruction** | English |
| **Type of course** | obligatory □ facultative □ |
| **Year of study/Semester** | I □ II □ III□ IV □ V □ VI □  | 1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □ 8 □ 9□ 10 □ 11□ 12 |
| **Number of didactic hours of classes with division for forms of teaching** | 45 (10- lectures, 5 seminaries, 30 exercises) |
| **Assumptions and aims of the course** | The aim of the Course is expanding basic knowledge of neurological anatomy, physiology and patophysiology to get ability to act in neurological emergencies which need surgical intervention. The course should lead to improving of decision making process in choosing diagnostic tests and proper treatment for selected pathologies, especially in neurotrauma, vascular diseases of the brain, intracranial tumors and degenerative disease of the spine. Student should be able to examine and estimate the patient with life threatening pathologies, especially one with increased intracranial pressure and disturbed consciousness and also should learn to plan diagnostic procedures (also radiographic) and to interpret their results and establish diagnose to start treatment. Course participants should acquire knowledge enough to perform basic procedures in neurointensive care.  |

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| **Symbol of** **education outcomes in accordance with the standards** | **Description of directional effects of education** | **Methods of verification of achieved learning outcomes** |
|  | **Knowledge (according to the detailed education outcomes)** |  |
| W1 | Knows and understands pathology, signs, rules of diagnostic process and treatment process in CNS diseases and neurotrauma. | Exercises and Seminaries – based on active participation in discussion. |
| W2 | Knows selected neurotrauma and neurosurgical issues  |
| W3 | Knows how to qualify and proceed basic invasive neurosurgical diagnostic/therapeutic tests |
| W4 | Knows possible complications of basic invasive neurosurgical diagnostic/therapeutic tests |
| W5 | Knows perioperative safety procedures  |
| W6 | Knows pain treatment and basic neuromonitoring in pre and post- operative period |
| W7 | Knows procedure of neurointensive care  |
| W11 | Knows presently used neuroimaging modalities, symptoms of selected CNS pathologies, techniques used for pre/intraoperative imaging, indications and contraindications for those tests |
| W14 | Knows and understands pathology, signs, diagnostic tests and treatment of the most frequent CNS pathologies: brain edema, increased intracranial pressure, head trauma, vascular malformations of CNS, CNS tumours, spine and spinal cord diseases |
| W16 | Knows how to recognize brain death |  |
|  | **Skills (according to the detailed education outcomes)** |  |
| U3 | Knows aseptic and antiseptic procedures | Assistance in diagnostic/therapeutic procedures |
| U4 | Is able to treat simple wound and apply proper dressing |
| U7 | Is able to recognize fractures of the skull and spine |
| U9 | Is able to stop external bleeding |
| U12 | Is able to interpret basic monitor parameters in postoperative period  |
| U20 | Is able to assess the patient according to international scales  |
| U21 | Recognizes signs & symptoms of elevated intracranial pressure  |
|  | **Social competence (according to the general education outcomes)** |  |
| K1 | He /She recognizes his/her own diagnostic and therapeutic limitations, educational needs, planning of educational activity | **Continuous assessment by the teacher** |
| K2 | He /She is able to work in a team of professionals, in a multicultural and multinational environment |
| K3 | He /She implements the principles of professional camaraderie and cooperation with representatives of other professionals in the range of health care |
| K4 | He /She observes doctor-patient privilege; and patient rights |

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| **ECTS points** |  |
| **Student Workload** |
| **Form of Activity** | **Number of hours to complete the activity** |
| **Activities that require the participation of (academic) teacher** |
| 1. Realization of the course: lecture
 | 10 |
| 1. Realization on of the course: seminar
 | 5 |
| 1. Realization of the course: classes
 | 30 |
| 1. exam
 | - |
| 1. electives
 | - |
|  |  total of hours 45 |
| **Self-study:**  |
| 1. Preparation for classes
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| 1. Preparation for credits / tests
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| 1. Preparation for the exam / final test
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|  |  total of hours  |

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|  **Course contents** |
| **Topics** | **Form** *(lectures, classes etc.…)* |
| CNS tumors | lecture |
| Pituitary tumors | lecture |
| Hydrocephalus and increased intracranial pressure | lecture |
| Vascular malformations of CNS | lecture |
| Developmental abnormalities of CNS | lecture |
| Peripheral nerve pathologies | lecture |
| Spine trauma | lecture |
| Degenerative disease of the spine  | lecture |
| Functional neurosurgery | lecture |
| Cranio-cerebral trauma | lecture |
| Epidemiology, etiology, pathology and prognosis in head trauma | seminar |
| Increased intracranial pressure | seminar |
| Intracranial bleeding | seminar |
| Spontaneous intracranial hemorrhagies | seminar |
| Spine degenerative disease and peripheral nerve entrapment syndroms | seminary |
| Cranial fractures, CSF leak | classes |
| Intracranial hematomas: subdural, epidural and intracerebral bleeding | classes |
| Spine degenerative disease and peripheral nerve entrapment syndromes | classes |
| Diffuse axonal injury. Cerebral contusion | classes |
| Mild and moderate head injury | classes |
| Delayed complications of head trauma | classes |
| Malignant brain tumors | classes |
| Benign brain tumors | classes |
| Cranial base tumors | classes |
| Dandy Walker syndrome, Arnold Chiari syndrome | classes |
| Intracranial vascular malformations | classes |
| Cerebral vasospasm in subarachnoid hemorrhage | classes |
| Treatment of vertebral disc herniation | classes |
| Posttraumatic spinal cord syndroms  | classes |
| Medical documentation issues | classes |

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| **A list of recommended and optional books** |
| Principles Of Neurosurgery by Robert A. Wilkins, Setti S. Rengachary . Publisher: Mosby, 2006Handbook of Neurosurgery by Mark S. Greenberg; Thieme, 2006 - 1013 Additional reading:Youmans Neurological Surgery; Elsevier Health Sciences, 2011 |

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| **Conditions for receiving credit** |
| Confirmed attendance record during all lectures, seminaries and workshops |

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| Date of issue**:** | *19.09.2017*  | Course coordinator or the head of the department where the course is held | *Zenon Mariak* |