UNIVERSITY OF NOVI SAD
FACULTY OF MEDICINE

Study program: Doctoral Academic Studies in Biomedical Sciences

Name of the course: INTEGRATIVE AND CLINICAL NEUROSCIENCE

Teacher(s): Željko D. Živanović, Svetlana S. Simić, Duško B. Kozić, Marija G. Žarkov, Mirjana N. Jovićević, Ksenija E. Gebauer-Bukurov, Marija D. Semnic, Aleksandar Š. Kopitović, Aleksandra S. Dickov, Oto F. Barak, Svetlana M. Ivanović Kovačević

Status of the course: elective

Number of ECTS points: 20

Condition: -

The aim of the course

The aim of this course is to acquire knowledge of the functioning of the nervous system, clinical manifestations of damage to various parts of the nervous system, contemporary neurophysiological, neurosonological and neuroradiological diagnostic tests to evaluate these diseases, as well as current therapeutic possibilities for treating neurological diseases. In addition, students will have the opportunity to master the knowledge which borders with the neuropsychiatry, as well as psychopharmacology.

Outcome of the course

Students will master basic knowledge as well as contemporary aspects of understanding neurological clinical syndromes, the importance of topographic relations of the structures of the central nervous system, the organization of individual parts of the nervous system. Students will also be introduced to the latest scientific theoretical and practical knowledge needed to successfully define and examine dysfunction of certain parts of the nervous system with the help of modern neurophysiological, neurosonological and neuroradiological methods and techniques. By acquiring the given knowledge, students will be able to independently create research problems, set goals and conduct research in the field of clinical integrative neurology.

Content of the course

Theoretical classes

1. Brain development and topography
2. Cerebral circulation and blood-brain barrier
3. Motor system (pyramidal pathway, upper and lower motor neuron, spinal cord ...), diagnostics, related diseases, and their treatment
4. Extrapyramidal system, cerebellum, movement disorders and related diseases
5. Sensory system (somatosensory system, visual, olfactory, gustatory, auditory, and vestibular pathways), diagnosis and treatment of related impairment
6. Cerebral cortex, Limbic system - structural and functional impairment
7. Epilepsy and electroencephalography
8. Clinical neuroradiology
9. Neuroimmunology
10. Neuropsychiatry and psychopharmacotherapy
11. Cerebrovascular diseases
12. Pain and pain syndromes

Practical classes

1. Ultrasound examination of brain circulation, transcranial Doppler, new methods for determining early atherosclerosis, vascular elasticity, and vasomotor reactivity
2. Neurophysiological methods in neurology - electroencephalography (EEG); electromyoneurography (EMNG); evoked potentials (EP)
3. Neuroimaging methods in neurology (computed tomography and magnetic resonance imaging)
4. Use of scales in neurology
5. Acute stroke management
6. Cerebrospinal fluid Analysis
7. How to approach patients with neurological pain syndromes_

Recommended literature

Compulsory:

1. Mtui E, Gruener G, Dockery P. Fitzgerald's Clinical Neuroanatomy and Neuroscience, 7th Edition. Elsevier Health Sciences 2015.
2. Johns P. Clinical Neuroscience. ScienceDirect 2014.

Additional

Additional literature will be recommended to the students with every unit of the theoretical classes		
Number of active classes	**Theoretical classes:** 60	**Practical classes:** 45
Methods of delivering lectures: Lectures, workshops, presentations, seminar papers		
Evaluation of knowledge (maximum number of points 100) activities during the lesson: 15 practical classes: 20 seminars: 15 written exam: 50		