UNIVERSITY OF BELGRADE
FACULTY OF MEDICINE
PhD STUDIES

NAME OF THE MODULE: Neuroscience

CONTENT OF THE PROGRAM:

Doctoral studies in neuroscience integrate knowledge at several levels including molecular, cellular, systemic, and behavioral. This enables basic, translational and clinical research related to the examination of the structural and functional basis of certain diseases of the central nervous system (CNS) within the module. Compulsory subjects enable detailed acquaintance with morphology, histological organization, development and molecular-biological characteristics of the CNS, mechanisms of synaptic transmission and synaptic plasticity, organization of neural circuits, electrophysiological characteristics of neurons, as well as structural, molecular and electrophysiological characteristics of individual psychiatric and neurological disorders. Within the elective courses in the second year of study, students can choose from a variety of educational directions, from behavioral neuroscience, experimental techniques, computer applications in neuroscience, neuropharmacology, adult neurogenesis, to research of structural, molecular-biology and clinical characteristics of individual psychiatric and neurological diseases, neurooncology and functional neurosurgery. With mentoring, students will be trained to recognize and solve scientific problems, introduce new techniques and approaches with maximum support for the development of creativity and originality of individuals. Education within this module should lead to the formation of high-quality and modern researchers who will be able to easily share knowledge and experience with other researchers around the world, thus actively contributing to the understanding of the complex links between the structure and function of the nervous system, comprehension of the pathogenesis of psychiatric and neurological diseases, as well as the discovery of new therapeutic targets and treatment modalities.

ADMISSION REQUIREMENTS:

General terms:

- The average grade from all previous levels of study to be at least 8.00
- Knowledge of English to the level of communication and monitoring of scientific literature
- Appropriate computer skills
- Desirable recommendations related to scientific research

Special terms:

- Persons with completed integrated academic studies in medical sciences lasting 6 years (360 ECTS); OR
- Persons with completed academic studies of biological or medical orientation who have achieved at least 300 ECTS at previous levels of study

MEMBERS OF THE ADVISORY BOARD:

Professor Nataša Petronijević

Professor Olivera Stanojlović

Professor Danica Grujičić

Professor Ivanka Marković

Associate Professor Maja Ivković

Associate Professor Milan Aksić

OBLIGATORY COURSES:

- Methodology of scientific research work
- Statistics for researchers in the field of biomedical sciences
- Research ethics
- Anatomy and development of the nervous system
- Molecular biology of the nervous system
- Neurophysiology

ELECTIVE COURSES:

- Visualization methods of central nervous system
- Behavioral neuroscience
- Neurobiological basis of mental disorders
- Neuropharmacology
- Computer application in neuroscience
- Experimental techniques in neuroscience
- Functional neurosurgery
- Neurooncology
- Adult neurogenesis
- Experimental and translational sleep medicine