

Doctoral School: **Biology Doctoral School**
Doctoral Program: Neuroscience and Human Biology

Subject code: **BIO/7/54**
Subject title: **Neurophysiology L**
Teacher and Neptun code: **Dr. Dobolyi Árpád (GLDXEV)**
Credits: 4
Class hours: 2 hours/week, lecture

Aims of the course

The lecture presents the main functions of the vertebrate nervous system, from the level of local neuronal networks to the level of main pathways. Sensory functions, motor regulation, and the neurophysiological basis of sleep-wake cycles, cognitive processes, navigation, memory and emotions are discussed.

Content of the course

1. Organization of cortical networks, principles of connections, local network functions
2. Network oscillations, rhythmic activities in the nervous system
3. Sensory systems I: olfaction and gustation
4. Sensory systems II: vision
5. Nervous system background of motor functions
6. The role of thalamocortical communication in higher neural functions
7. Neurophysiology of sleep and wakefulness
8. The role of cortical networks in cognitive functions
9. The role of subcortical pathways in cognitive functions
10. Navigation: how space is encoded by the brain
11. Episodic memory: how the film of our lives is made
12. Nervous system background of emotional states

Requirements

written exam, essay questions

Literature

ppt slides

