

Subject card

Subject name and code	Neural regulation of motor functions, PG_00154725						
Field of study	Biology						
Date of commencement of studies	October 2024		Academic year of realisation of subject			2024/2025	
Education level	postgraduate studies		Subject group			Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study	
Mode of study	full-time studies		Mode of delivery			at the university	
Year of study	1		Language of instruction			Polish	
Semester of study	2		ECTS credits			2.0	
Learning profile	academic		Assessment form				
Conducting unit	Pracownia Neurobiologii -> Katedra Fizjologii Zwierząt i Człowieka -> Faculty of Biology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Beata Grembecka				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	30		4.0		16.0	50
Subject objectives	The purpose of the subject is to understand the mechanisms of motor function regulation at various levels of the nervous system organization and experimental models of motor disorders used in rodent studies. Acquisition of skills to independently deepen and present knowledge about neuronal mechanisms of motor function regulation and experimental models of motor disorders used in rodent studies it is proposed						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BIOLMU2_W05] the graduate knows and understands the dynamic development of the biological sciences and new research directions and disciplines	During the preparation for classes, the student searches and analyzes the latest scientific articles	[SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
	[BIOLMU2_K05] the graduate is prepared to use recognised sources of scientific and popular information in the biological sciences to further his or her knowledge	During the preparation for classes, the student searches and analyzes the latest scientific articles	[SK1] oral statement/conversation/ discussion [SK3] text preparation/written work
	[BIOLMU2_K07] the graduate is ready to systematically update biological knowledge and information on its practical applications	During the preparation for classes, the student searches and analyzes the latest scientific articles	[SK1] oral statement/conversation/ discussion [SK2] presentation/project/paper/ report
	[BIOLMU2_U02] the graduate is able to make proficient use of the scientific literature of the biological speciality studied	During the preparation for classes, the student searches and analyzes the latest scientific articles	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report
	[BIOLMU2_U07] the graduate is able to critically confront biological information from a variety of sources and, on this basis, draw valid conclusions	The student is able to critically search for and analyze the latest research results and present them in written and/or oral form.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report
	[BIOLMU2_W04] the graduate has an in-depth knowledge of the chosen specialisation in the biological sciences	The student acquires expert knowledge in a selected thematic area and is able to present it in written or oral form	[SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
Subject contents	Movement as a fundamental form of behavior in humans and animals. Categories of motor behaviors occurring in humans and animals. Levels of functional organization of movement. Organization of motor centers of the spinal cord. The level of the brainstem and midbrain. Functional organization of the basal nuclei. Control of automatic and voluntary movements. Correction of motor functions at the level of the cerebellum. Somatotopy in the motor structures of the cerebral cortex. Neurotransmitter and neuropeptide systems involved in the regulation of motor functions. Neurophysiological properties of motor neurons and mirror neurons. Neuronal basis of motor function control disorders: plegia, dyskinesia, dystonia, amyotrophic lateral sclerosis, Huntingtons chorea, Parkinsons disease, cerebellar ataxia, speech disorders. Experimental models of motor disorders in rodents. Methods of behavioral assessment of motor skills in rodents. Review of the latest research using experimental models of motor disorders.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Active participation in conservatories	51.0%	40.0%
	Project	51.0%	40.0%
	attendance at conservatories	51.0%	20.0%
Recommended reading	Basic literature	Handbook of Basal Ganglia Structure and Function, Heinz Steiner, Kuei Tseng, Academic Press, 2016; Mózg człowieka. Anatomia czynnościowa mózgowia, John Nolte, red. wyd. pol. Janusz Moryś, Elsevier Urban & Wrocław 2011, Neuroanatomia kliniczna, Paul A. Young, red. wyd. pol. Janusz Moryś, Elsevier Urban & Wrocław 2016, Biologiczne mechanizmy zachowania się ludzi i zwierząt Bogdan Sadowski, PWN, Warszawa 2007 Current scientific articles recommended by the lecturer.	
	Supplementary literature	Scientific articles recommended by the lecturer.	
	eResources addresses	Adresy na platformie eNauczanie:	
	Example issues/ example questions/ tasks being completed		

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