University of Gdańsk

Subject card

Subject name and code	Neurophysiology, PG_00203435						
Field of study	Medical Biology						
Date of commencement of studies	October 2026		Academic year of realisation of subject	2027/2028			
Education level	Bachelor's studies		Subject group	Obligatory subject group in the field of study Optional subject group			
Mode of study	full-time studies		Mode of delivery	at the university			
Year of study	2		Language of instruction	Polish			
Semester of study	3		ECTS credits	1.0			
Learning profile	academic		Assessment form	exam			
Conducting unit	Faculty of Biology -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Witold Żakowski				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	0.0	15
	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	15		2.0		8.0	25
Subject objectives	Demonstrating the primary role of the nervous system in controlling human vital functions.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BIOLMEDL3_W02] has an advanced knowledge and understanding of the structure of the animal or human body, processes and functional relationships at the cellular, tissue, organ and organismal levels, as well as physiological and biochemical processes at an advanced level, and the mechanisms of the pathophysiology of diseases, and explains their relationship with behaviour and the organism's	the student knows the structure of the human nervous system, functional relationships at the cellular, tissue, organ and organismal levels and explains their relationship with the behavior and adaptation of the organism to changing environmental conditions	[SW4] test/exam - oral or written
[BIOLMEDL3_W10] has an advanced understanding of the principles of assessing processes and phenomena occurring within the body, using physical or chemical measurements, and possesses advanced knowledge of experimental methods and the key techniques of the biological sciences that may be applied in medical biology and diagnostics	the student explains the theoretical basis of experimental methods and lists the most important techniques used in neurobiology	[SW4] test/exam - oral or written
[BIOLMEDL3_W04] has advanced knowledge of medical biology and its latest developments, and is familiar with and understands issues related to the role of medical biology in human health care	the student has advanced knowledge of neurobiology and knows neurobiological terminology	[SW4] test/exam - oral or written
[BIOLMEDL3_W03] has an advanced knowledge and understanding of the characteristics, systematics and evolution of selected groups of organisms, taking into account their molecular basis, and describes the fundamental concepts and mechanisms of evolution; furthermore, the student describes, explains and compares, at an advanced level, the systemic regulatory mechanisms in animal and human organisms (including from an ontogenetic and phylogenetic perspective) and understands the neurobiological and genetic basis of disorders	presents the characteristics, systematics and evolution of primates, with particular emphasis on hominins, and describes the basic mechanisms of evolution	[SW4] test/exam - oral or written
[BIOLMEDL3_W06] idefines the key laws and principles of physics and chemistry that underpin biological processes, describes the properties of elements and chemical compounds, and has an advanced knowledge and understanding of the physicochemical and biological foundations of health sciences	the student understands and is able to describe the biological and physicochemical basis of the science of the nervous system	[SW4] test/exam - oral or written

Subject contents

Physiology of the central and peripheral nervous system. Peripheral nerves and their function. Levels of integration of the posture mechanism. Involuntary movements, extrapyramidal system. The involvement of the spinal cord and individual brain structures in behavioral reactions. The limbic system and the reticular formation. Function of the cerebral cortex with the basics of electroencephalography, mechanisms of sleep and wakefulness. Localization of functions in the cerebral cortex.

Prerequisites and co-requisites

basic knowledge of human anatomy and physiology

the need to pass exercises in this subject before taking the lecture exam

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
exam - written test	51.0%	100.0%

Recommended reading	Basic literature	Lewandowska D., Orzeł-Gryglewska J. Jurkowlaniec E. 2019. Fizjologia zwierząt i człowieka, Wydawnictwo Uniwersytetu Gdańskiego. Felten D.L. i wsp. 2003. Atlas neuroanatomii i neurofizjologii Nettera. Elsevier Urban & Partner, Wrocław. Ganong W.F., 2007. Fizjologia. Wydawnictwo Lekarskie PZWL, Warszawa Narkiewicz O., Moryś J. Neuroanatomia czynnościowa i kliniczna. Wydawnictwo Naukowe PZWL, Warszawa
	Supplementary literature	Sadowski B. 2005. Biologiczne mechanizmy zachowania się ludzi i zwierząt. PWN, Warszawa. Brodal Per 2004. The central nervous system. Structure and function. Oxford University Press. Longstaff A. 2002. Neurobiologia. Wydawnictwo Naukowe PWN, Warszawa.
	eResources addresses	
Example issues/ example questions/ tasks being completed	mechanism of neuron excitability tracts and centers of the spinal cord cerebellar function, structural and functional unit of the cerebellum involuntary movements damage to the extrapyramidal system	
Work placement	Not applicable	

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