University of Gdańsk

Subject card

Subject name and code	Neurophysiology, PG_00196845						
Field of study	Biology						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2028/2029		
Education level	Bachelor's 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	3		Language of instruction		Polish		
Semester of study	5		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 hab. Jolanta Orzeł-Gryglewska				
	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
[BIOLL3_U12] The graduate is able to use Polish and foreign languages specific to biology in a way that is understandable and accessible to both specialists and non-specialists	the student is able to use specialized concepts in the field of neurophysiology and explain these terms	[SU4] test/exam - oral or written
[BIOLL3_W14] The graduate has an advanced understanding of experimental methods and the most important techniques used in the biological sciences	the student knows the theoretical basis of neurophysiological methods and the most important techniques in this field	[SW4] test/exam - oral or written
[BIOLL3_W03] The graduate knows and uderstands at an advanced level the the structure and functional relationships at the cellular, tissue, organ and organismal levels	the student knows the structure of the nervous system and the functional relationships within this system at the cellular, tissue and organ levels and is able to demonstrate the primary controlling role of the nervous system in the body	[SW4] test/exam - oral or written
[BIOLL3_W10] The graduate is familiar with the development and current state of knowledge and the latest trends in biology, as well as their relationship with other natural disciplines	the student is aware of the current state of knowledge and the latest trends in neurophysiological research, and also knows their relationship with other natural science disciplines	[SW4] test/exam - oral or written
[BIOLL3_W04] The graduate knows and understands at an advanced level the course of physiological processes and their relationship to the adaptation of the organism to changing environmental conditions	the student describes the course of neurophysiological processes and their relationship with the body's adaptation to changing environmental conditions	[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. The involvement of the spinal cord and individual brain structures in behavioral reactions. The limbic system and the reticular formation. Extrapyramidal system. 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 physiology and anatomy

Before taking the exam, you must complete the exercises in this subject.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
written test exam	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

Spinal cord tracts and centers

Cerebellar structural and functional unit, symptoms of cerebellar damage

Centers of the extrapyramidal system

Location of speech centers in the cerebral cortex

Work placement

Not applicable

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