

## Subject card

Subject name and code	Engineering problems in neurology, PG_00055758								
Field of study	Mechanical and Medical Engineering								
Date of commencement of studies	October 2022		Academic year of realisation of subject			2023/2024			
Education level	first-cycle studies		Subject group			Obligatory subject group in the field of study 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	2		Language of instruction			Polish			
Semester of study	4		ECTS credits			1.0			
Learning profile	general academic profile		Assessment form			assessment			
Conducting unit	Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship Technology							chnology	
Name and surname	Subject supervisor Grzego			Grzegorz Kozera					
of lecturer (lecturers)	Teachers		Grzegorz Koz	era					
Lesson types and methods	Lesson type	Lecture	Tutorial	Laboratory	Projec	:t	Seminar	SUM	
of instruction	Number of study hours	10.0	0.0	5.0	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		1.0		9.0		25	
Subject objectives	To acquaint the student with the basic causes, symptoms and treatments of diseases of the nervous system. Overview of the most important methods of neuroimaging, neurophysiological and ultrasound diagnostics used in neurology. Mastering by the student to solve the basic problems related to the prevention of diseases of the nervous system								
Learning outcomes	Course out	come	Subject outcome Method of veri				fication		
	[K6_W12] he/she has basic knowledge in the field of fundamental medical sciences, human body anatomy, and physiology, salvage service		The student is able to recognize the basic symptoms of disease, can select adequate diagnostic techniques and knows the rules of prevention.			[SW1] Assessment of factual knowledge			
			The student is aware of the importance of non-technical conditions and effects of engineering activities. The student is aware of the responsibility for the decisions made.			[SK2] Assessment of progress of work			
	[K6_U10] he/she is able to assess the human body physic and basic functioning of the body organs, he/ she is able to use basic medical knowledge to solve mechanical- medical problems in the scope of the MME study		The student describes the basic elements of the nervous system, explains the most important principles of their functioning and the main causes of disease symptoms			[SU3] Assessment of ability to use knowledge gained from the subject			

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construction of the motor and sensory system, - the most common disorders in the sensory system.  2. Vascular diseases of the brain - stroke / TIA - epidemiology and risk factors, - main symptoms in the disease, - treatment methods, - diagnostics - neuroimaging techniques, - stroke prevention.  3. Diseases of the spine and spinal cord, - diagnostic and therapeutic methods, - prevention of diseases of the spine and spinal cord, - diagnostic and therapeutic methods, - prevention of diseases of the spine and spinal cord, - diagnostic and therapeutic methods, - prevention of diseases of the spine.  4. Methods of diagnosing nervous system diseases: neurophysiological basics, used used, clinical indications and obtained results  A: electrophysiological tests: - electroencephalography, - nerve conduction studies, discrimyographic examination, - evoked potentials;  B: ultrasound examinations - ultrasound of intracerebral afteries, - transcrianial ultrasound, - ultrasound of intracerebral afteries, - transcrianial ultrasound, - ultrasound of peripheral nerves.  Prerequisites  Basic knowledge of the subjects: Physics, Biology, Electrical Engineering  Alterodancer transcripation in discriminations - ultrasound of peripheral nerves.  Prerequisites  Busice passing criteria Passing threshold Percentage of the final grade Alterodancer participation in discriminations ultrasound representative Passing threshold Percentage of the final grade Alterodancer participation in discrete participation discrete partic	Subject contents	1: Basics of the anatomy of the ne	ryous system: - structure of the centra	al and peripheral nervous system -				
disease, - treatment methods, - diagnostics - neuroimaging techniques, - stroke prevention.  2. Diseases of the sprine and sprinal cord, - diagnostic and fueropeutic methods, - prevention of clieseases of the sprine.  4. Methods of diagnosing nervous system diseases: neurophysiological basics, used used, clinical indications and obtained results  A. electrophysiological tests:  - electromyographic examination, - evoked potentials;  B: ultrasound examinations:  - ultrasound of intracerebral anteries, - transcranial ultrasound, - ultrasound of peripheral nerves.  Prerequisities  Assessment methods and orderial  Attendance / participation in 80.0% and orderial  Recommended reading  Basic literature  Wyd.4  Supplementary literature  Okroj Jubechs Julitia, SZUROWSKA EDYTA, KOZERA GRZEGORZ Medicy neurobazowania care (pazy ultra nestwiemengo mozgu prakyce kiniczne) (Forum Med. Rodz. 2015 ; 1. 9, in 6  Radoslaw Kaźmierski (red.) Pederezwik diagnostyki ultrasonograficzne w neurologii, Czesię, Lublin 2011  Grzegorz Kozera, Joanna Wojczal, Walenty Michal Nyka Zastosowani badań ultrasonograficznych w profilaktyce udaru mózgu. Forum Medycyny Rodzinnej 2006. T. 2, in 6, e  Resources addresses  Example issues/ example questions/ stasks being completed  Example issues/ example questions/ stasks being completed  Example issues/ example questions/ stasks being completed of the error of the error of the severance and diseases. Define indications and diseases the methods of thissonal and standard processor of the forum of the developing spine diseases. Define indications and diseases the methods of the firms of the control processor of the severance and diseases to the methods of the interestion and diseases. Define indications and diseases the methods of the interestion and such processor of the solution processor and diseases. Define indications and diseases the methods of the inte	Subject contents	Basics of the anatomy of the nervous system: - structure of the central and peripheral nervous system, - construction of the motor and sensory system, - the most common disorders in the sensory system.						
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Work placement Not applicable	Work placement		<u> </u>					

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