

## SDAŃSK UNIVERSITY 的 OF TECHNOLOGY

## Subject card

Subject name and code	Physical rehabilitation engineering, PG_00039379							
Field of study	Medical and Mechanical Engineering, Mechanical and Medical Engineering							
Date of commencement of studies	October 2020		Academic year of realisation of subject			2022/2023		
Education level	first-cycle studies		Subject group			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			3.0		
Learning profile	general academic profile		Assessment form			assessment		
Conducting unit	Institute of Mechanic	Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship				and Ship Tec	hnology	
Name and surname	Subject supervisor		Dominika Szalewska					
of lecturer (lecturers)	Teachers		Dominika Szalewska					
Lesson types and methods	Lesson type	Lecture	Tutorial	Laboratory	Projec	t Seminar SUM		SUM
of instruction	Number of study hours	15.0	0.0	15.0	0.0	0.0 30		30
	E-learning hours included: 0.0							
Learning activity and number of study hours	Learning activity	Participation in classes includ plan	n didactic ed in study	Participation i consultation h	ition in tion hours		udy	SUM
	Number of study hours	of study 30		3.0		42.0 75		75
Subject objectives	Established knowledge of basic issues of modern motor rehabilitation.							
Learning outcomes	Course outcome		Subject outcome			Method of verification		
	K6_U11		The student can assess routine procedures used to solve problems of motor rehabilitation and can choose the best of them.			[SU4] Assessment of ability to use methods and tools		
	K6_W12		The student knows the mechanisms of action and indications for basic devices used in motor rehabilitation.			[SW1] Assessment of factual knowledge		
	K6_U10		The student can model basic issues of motor rehabilitation engineering.			[SU2] Assessment of ability to analyse information		
	K6_W13		The student has basic knowledge in the field of motor rehabilitation engineering.			[SW1] Assessment of factual knowledge		
Subject contents	LECTURE Definition, indications and contraindications to physical rehabilitation. Medical devices used in rehabilitation. Methods of measuring exercise capacity in healthy people and patients. Adaptation to physical exercise in patients with cardiovascular diseases. Exercise testing on bicycle ergometer and treadmil. The use of spirometry and ergospirometry in rehabilitation. Kinesytherapy in internal diseases. The role of education in rehabilitation. Individual character of rehabilitation of patients with cardiac pacemaker and implantable cardioverter-defibrylator. Elements of sports cardiology. Rehabilitation in patients with respiratory system diseases, in patints with diabetes and treated with haemodialysis. Exercise training in patints after myocardial infarction, after cardiosurgery and with heart failure. Telemedicine in rehabilitation. LABORATORY Performing exercise testing on bicycle ergometer and treademil. Monitoring and evaluation of rehabilitation effectiveness: echocardiography, electrocardiography (ECG), 24-hours measurements of ECG and blood pressure. Analysis of rehabilitation methods in patients with different diseases. Familiarization of systems for telerehabilitation Exercises on the platform for evaluation of the body balance and podometer.							
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Recommended reading	Basic literature	1.Oxford Handbook of Rehabilitation Medicine / Barnes M. P., Ward A. B.; Oxford University Press. 2.Physical Medicine and Rehabilitation / Braddom R. L.; Saunders / Elsevier				
	Supplementary literature	1. Physical Medicine & Rehabilitation Review / Kaplan R. [ed. by]; McGraw-Hill. 2. Physical Medicine and Rehabilitation Secrets / O'Young B. J. [ed. by], Young M. A., Stiens S. A.; Mosby				
	eResources addresses	Adresy na platformie eNauczanie:				
Example issues/ example questions/ tasks being completed	1. What is locomat used for?					
	2. What are the features of Polish model of rehabilitation?					
	3. What is ergospirometry?					
Work placement	Not applicable					