GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Personal Assist Devices, PG_00049344		
Field of study	Biomedical Engineering		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2027/2028
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	4	Language of instruction	Polish
Semester of study	7	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Department of Biomedical Engineering -> Faculty of Electronics, Telecommunications and Informatics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Tomasz Kocejko	
	Teachers		

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	15.0	15.0	0.0	0.0	45

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	45	4.0	51.0	100

Subject objectives

To familiarize students with the basic requirements and methods of compliance for the assistive equipment used at home

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W02] knows and understands, to an advanced extent, selected laws of physics and physical phenomena as well as methods and theories explaining the complex relationships between them, constituting the basic general knowledge in the field of technical sciences related to the field of study	Student - identifies the processes responsible for certain signal generation, - selects appropriate measurement method, - develops algorithm of data processing and analysis	[SW1] Assessment of factual knowledge
[K6_W06] Knows and understands the basic processes occurring in the life cycle of devices, facilities and systems specific to a given field of study.	The student - knows the rules to create standards - knows the standards for medical equipment including equipment used in the place of residence	[SW1] Assessment of factual knowledge
[K6_U02] can perform tasks related to the field of study in an innovative way as well as solve complex and nontypical problems, applying knowledge of physics, in changing and not fully predictable conditions	Student - design aids a person with a specific dysfunction - verifies the functionality achieved by referring to the assumptions	[SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools [SK5] Assessment of ability to solve problems that arise in practice

Subject contents

1 Introduction, requirements, 2 Trends in the development of personal equipment, 3 Possible areas of diagnosis and support, 4 pressure measurement, possible techniques, the fifth embodiment, 6. Personal ECG, 7 Measurement of glucose in the blood, 8 Measurement blood viscosity, 9 Hearing, 10 Aiding of the visually impaired, 11. Aiding , 12 Aiding of blind people in the use of computers, 13 Aiding people with reduced mobility, 14 interfaces, 15 Domotic

Prerequisites and co-requisites

Analog and dugital circuits, Biosignals, Bioinstrumentation

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		60.0%	30.0%
		60.0%	40.0%
		60.0%	30.0%
Recommended reading	Basic literature	J. Moore, G. Zouridakis, Biomedical technology and devices, handbook, CRC Press, 2003 R.B. Northrop, Noninvasive instrumentation and measurement in medical diagnosis, CRC Press 2001 J. Enderle [red}, Introduction to biomedical engineering, Elsevier, 2005	
	Supplementary literature	IEEE Transaction on Biomedical Engineering IEEE Pervasive computing	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	Technology-Related Assistance for Individuals with Disabilities Act (1988)		
Work placement	Not applicable		