



Subject card

| | | | | | | | |
|---|--|--|------------------------|-------------------------------------|--|------------|-----|
| Subject name and code | Personal Assist Devices, PG_00049344 | | | | | | |
| Field of study | Biomedical Engineering | | | | | | |
| Date of commencement of studies | October 2022 | Academic year of realisation of subject | | | 2025/2026 | | |
| 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 digital 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 | <p>J. Moore, G. Zouridakis, Biomedical technology and devices, handbook, CRC Press, 2003</p> <p>R.B. Northrop, Noninvasive instrumentation and measurement in medical diagnosis, CRC Press 2001</p> <p>J. Enderle [red], Introduction to biomedical engineering, Elsevier, 2005</p> | |
| | Supplementary literature | <p>IEEE Transaction on Biomedical Engineering</p> <p>IEEE Pervasive computing</p> | |
| | eResources addresses | Adresy na platformie eNauzanie: | |
| Example issues/ example questions/ tasks being completed | Technology-Related Assistance for Individuals with Disabilities Act (1988) | | |
| Work placement | Not applicable | | |