

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject (-)		Code 1010601321010628484
Field of study Transport	Profile of study (general academic, practical) general academic	Year /Semester 1 / 2
Elective path/specialty -	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 2 Classes: - Laboratory: - Project/seminars: 1		No. of credits 2
Status of the course in the study program (Basic, major, other) other		(university-wide, from another field) university-wide
Education areas and fields of science and art technical sciences Technical sciences		ECTS distribution (number and %) 2 100% 2 100%
Responsible for subject / lecturer: Marek Zablocki email: Marek.Zablocki@put.poznan.pl tel. 616652056 IT ul. Piotrowo 3, 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	basic knowledge of technology
2	Skills	logic thinking, the use of information obtained from internet, standards, catalogues
3	Social competencies	bases skills action in team, understanding of the need for an example of knowledge.
Assumptions and objectives of the course: Getting basic knowledge about: structure, action and the importance of development and technique design of means of transport dedicated to disabled persons and older age people		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Has a detailed knowledge of the transport systems, including: the importance of transport in the socio-economic system of the country, region and city, evaluation of transportation systems, types of transport processes, methods of organization and technology for passenger transport. - [K1A_W10]		
2. Has a detailed knowledge necessary for understanding the specialized subjects and expertise of the characteristics of transport, preferably in the specialization area, economic and social role of transport - [K1A_W21]		
3. Has the knowledge of safety of technical systems, reliability and security of man/technical object systems - environment. - [K1A_W22]		
4. Has the knowledge of identifying sources of hazards and risks, risk assessment, risk evaluation and dealing with the risk. - [K1A_W23]		
Skills:		
1. Is able to obtain information from the literature, internet, databases and other sources in Polish and English. Can integrate the information to interpret and learn from them, create and justify opinions. - [K1A_U01]		
2. Is able to analyze objects and technical solutions, can search the catalogs and manufacturers websites for ready-made components of machinery and equipment, evaluate their suitability for use in own technical and organizational projects. - [K1A_U10]		
Social competencies:		

1. Understands the need and knows the possibilities of lifelong learning, knows the need for acquiring new knowledge for professional development. - [K1A_K01]
 2. Is able to define the tasks and priorities for their implementation for himself and the coworkers team. - [K1A_K05]

Assessment methods of study outcomes

Lecture: written exam ? test

Project: credit on the basis of test, homework and class activity

Course description

Disability definition. Classification of technical devices using in disabled persons transport and older age people. Development trends of rehabilitation engineering means (new requirements, technologies, materials, design solutions, design and construction means and function). Technique system: human with disability ? technical solutions, biomechanical base (elements, biocinematic chain, center of gravity, moment biomechanism), rehabilitation engineering means and assisting technique ? discussion (wheelchair orthopedic, active, sport, tourist), passenger car (systems supporting to getting, exit, driving for disabled persons and older age people), collective transport means (road, rail, air, water), close transport technique (measure to verticalization, specific principles of design wheelchair on an example active wheelchair (modular construction, series of construction, rehabilitation construction, structure of construction nodes, ways of supporting body user, searching ideal position of body, dynamic race wheelchair) searching for a need, formulation a list of requirements, principles universal design

Basic bibliography:

1. Wprowadzenie do inżynierii rehabilitacyjnej, red. M. Zabłocki, Wyd. WMRIIT, Poznań 2017
2. Projektowanie dla seniorów i osób z niepełnosprawnościami, badania, analizy, oceny, konstrukcje, red. B. Branowski, Wyd. WMRIIT PP, Poznań 2015
3. Innowacyjne koncepcje i konstrukcje produktów dla osób niepełnosprawnych i w starszym wieku, red. B. Branowski, Wyd. CIRITT PP, Poznań 2013
4. Sydor M., Wybór i eksploatacja wózka inwalidzkiego, Wydawnictwo Uniwersytetu Przyrodniczego w Poznaniu, Poznań 2003

Additional bibliography:

1. Biomechanika i inżynieria rehabilitacyjna, red. R. Będziński i inni, Wyd. Akademicka Oficyna Wydawnicza EXIT, Warszawa 2004
2. Pańniczek R., Wybrane urządzenia wspomagające i fizjoterapeutyczne w rehabilitacji porażen ośrodkowego układu nerwowego i amputacjach kończyn, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 1998
3. Marciniak J., Szewczenko A., Sprzęt szpitalny i rehabilitacyjny, Wydawnictwo Politechniki Śląskiej, Gliwice 2003

Result of average student's workload

Activity	Time (working hours)	
1. Preparation for the lecture, projects	1	
2. Participation in the lecture, projects	45	
3. Fixing the content of the lecture	1	
4. Participation in consultations	1	
5. Preparation for the sentence	1	
6. Participation in passing the lecture, projects	1	
Student's workload		
Source of workload	hours	ECTS
Total workload	50	2
Contact hours	45	0
Practical activities	0	0