



COURSE DESCRIPTION CARD - SYLLABUS

Course name

ISSUES OF DISABLED PERSONS IN TRANSPORT

Course

Field of study

Year/Semester

Transport

1/2

Area of study (specialization)

Profile of study

-

general academic

Level of study

Course offered in

First-cycle studies

polish

Form of study

Requirements

full-time

compulsory

Number of hours

Lecture

Laboratory classes

Other (e.g. online)

30

0

0

Tutorials

Projects/seminars

0

15

Number of credit points

2

Lecturers

Responsible for the course/lecturer:

dr Jarosław Gabryelski

Responsible for the course/lecturer:

dr hab. inż. Marek Zabłocki, prof. PP

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Faculty of Civil and transport Engineering

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Prerequisites

Knowledge: basic knowledge of technology

Skills: logic thinking, the use of information obtained from internet, standards, catalogues

Social competences: bases skills action in team, understanding of the need for an example of knowledge.

Course objective

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

Course-related learning outcomes

Knowledge



The student has ordered and theoretically founded general knowledge in the field of key issues of technology and detailed knowledge in the field of selected issues in this discipline of transport engineering

The student has knowledge of important development trends and the most important technical achievements and of other related scientific disciplines, in particular transport engineering

Skills

The student is able to take into account in the process of formulating and solving tasks in the field of transport engineering also non-transport aspects, in particular social, legal and economic issues

The student is able - in accordance with the given specification - to design (create a model of a fragment of reality), formulate a functional specification in the form of use cases, formulate non-functional requirements for selected quality characteristics) and implement a device or a widely understood system in the field of means of transport, using appropriate methods, techniques and tools

Social competences

The student is aware of the importance of knowledge in solving engineering problems, knows examples and understands the causes of malfunctioning transport systems that have led to serious financial and social losses or to serious loss of health and even life

The student correctly identifies and solves dilemmas related to the profession of a transport engineer

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: written test - colloquium

Projects: credit on the basis of a test, own homework and activity during classes

Programme content

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

Teaching methods



1. Lecture with a multimedia presentation (a form of an information lecture with elements of a problem-based and conversational lecture)
2. Project - credit based on own homework and activity in the classroom (the use of classic problem methods, case study, discussion, practical exercises)

Bibliography

Basic

Wprowadzenie do inżynierii rehabilitacyjnej, red. M. Zabłocki, Wyd. WMRIIT, Poznań 2017

Projektowanie dla seniorów i osób z niepełnosprawnościami, badania, analizy, oceny, konstrukcje, red. B. Branowski, Wyd. WMRIIT PP, Poznań 2015

Innowacyjne koncepcje i konstrukcje produktów dla osób niepełnosprawnych i w starszym wieku, red. B. Branowski, Wyd. CIRiTT PP, Poznań 2013

Sydor M., Wybór i eksploatacja wózka inwalidzkiego, Wydawnictwo Uniwersytetu Przyrodniczego w Poznaniu, Poznań 2003

Additional

Biomechanika i inżynieria rehabilitacyjna, red. R. Będziński i inni, Wyd. Akademicka Oficyna Wydawnicza EXIT, Warszawa 2004

Pańniczek R., Wybrane urządzenia wspomagające i fizjoterapeutyczne w rehabilitacji porażenń ośrodkowego układu nerwowego i amputacjach kończyn, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 1998

Marciniak J., Szewczenko A., Sprzęt szpitalny i rehabilitacyjny, Wydawnictwo Politechniki Śląskiej, Gliwice 2003

Breakdown of average student's workload

	Hours	ECTS
Total workload	60	2,0
Classes requiring direct contact with the teacher	45	1,5
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) ¹	15	0,5

¹ delete or add other activities as appropriate