



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Shaping the environment for people with special needs

### Course

Field of study

Safety Engineering

Area of study (specialization)

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

3/5

Profile of study

general academic

Course offered in

Polish

Requirements

elective

### Number of hours

Lecture

15

Tutorials

15

Laboratory classes

Projects/seminars

15

Other (e.g. online)

### Number of credit points

4

### Lecturers

Responsible for the course/lecturer:

Ph.D., D.Sc., Eng. Marcin Butlewski, University  
Professor

Responsible for the course/lecturer:

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Faculty of Engineering Management

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### Prerequisites



Basic knowledge of the distribution of needs in the general population - knowledge of ergonomics and psychology.

### Course objective

Familiarizing students with the issues of the organization of workstations for people with disabilities and about various characteristics of abilities. Acquainting with the principles and methods used in the assessment, modeling and removal of barriers for users with different performance characteristics.

### Course-related learning outcomes

#### Knowledge

Has advanced knowledge of the life cycle of products, devices, facilities, systems and technical systems. [K1\_W06]

He knows the fundamental dilemmas of modern civilization and development trends as well as the best practices in the field of security engineering. [K1\_W10]

#### Skills

Can properly select sources and information derived from them, perform the evaluation, critical analysis and synthesis of this information. [K1\_U01]

He can see system and non-technical aspects in engineering tasks, as well as socio-technical, organizational and economic aspects. [K1\_U03]

He can prepare the necessary resources to work in an industrial environment and knows the safety rules related to this work and can enforce their use in practice. [K1\_U05]

He is able to take part in a debate, to present a problem falling within the scope of safety engineering using appropriately selected means. [K1\_U09]

Can identify changes in requirements, standards, regulations and technical progress and the reality of the labor market, and on their basis define the need for supplementing knowledge. [K1\_U12]

#### Social competences

He can see the cause-and-effect relationships in the implementation of set goals and use ranks in relation to the importance of alternative or competitive tasks. [K1\_K01]

Is aware of the recognition of the importance of knowledge in solving problems in the field of safety engineering and continuous improvement. [K1\_K02]

Is aware of responsibility for their own work and readiness to submit to the principles of teamwork and responsibility for jointly performed tasks. [K1\_K07]

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Formative assessment:

a) in the field of exercises: current checking of knowledge and skills during exercises



- b) in the field of lectures: on the basis of a discussion on the material assimilated at previous lectures;
- c) in the scope of the project, current assessment of the degree of completion of individual project tasks;

Summative assessment:

- a) in the field of exercises: on the basis of the results of the average of partial grades of the forming assessment
- b) in the field of lectures: exam in the form of a written test;
- c) in the scope of the project, the assessment of the way of describing the way of solving the given design problem and the degree of implementation of individual steps.

### Programme content

Definitions, classifications of abilities, Specifications of the needs of people with different levels of abilities, Special rights of disabled employees (prohibition of discrimination, working time limits, prohibition of night and overtime work, breaks at work, employment rules), Institutional assistance in the field of employing disabled people; Design standards for people with disabilities, the elderly; Universal Design and its various varieties; Solutions and devices limiting the effects of various efficiency; ergonomics of people with disabilities - solutions supporting the work of people with various abilities; Organizational innovations supporting the employment of people of various abilities.

### Teaching methods

Lectures with multimedia presentation; task exercises on topics related to the lectures and the project;

### Bibliography

#### Basic

Butlewski M., Ergonomic design in the face of the dynamics of the human resource deficit, Poznań University of Technology 2018, ISBN: 978-83-7775-506-8; 255 pages

Branowski B., Zabłocki M. 2006, Creation and contamination of design principles and construction principles in designing for people with disabilities, [in]: Product ergonomics. Ergonomic principles of product design, (ed.) Jan Ja-błoński, Wyd. Poznań University of Technology, 2006, ISBN: 83-7143-238-0

Smoliński D., Creation and evaluation of workplaces for people with disabilities; Publisher: ODDK; ISBN code: 8371871570

#### Additional

Bromley, D. (1969) Psychology of aging, Warsaw State Scientific Publishers, 1969

Butlewski, M. (2012). The issue of product safety in contemporary design. Safety of the System, Technical, Organizational and Human Work Safety Determinants. Ed. Simon Salamon. Ed. PC freq. Częstochowa, 1428-1600.



Kabsch A. 2003, Needs for rehabilitation in the foreseeable future, in: Ergonomics of the disabled in the future, ed. J. Lewandowski, J. Lecewicz-Bartoszewska, M. Sekieta, Wyd. Of the Lodz University of Technology, Lodz

Kurkus-Rozowska B. 2002, The impact of rehabilitation on the improvement of physical fitness of people with physical disabilities, Work Safety, 3/2002, p. 21

Marchewka A., Dąbrowski Z., Żoładź JA, (2013) Physiology of aging: prevention and rehabilitation / science editor .. PWN Publishing House, Warsaw 2013.

Steuden S. Psychology of aging and old age. OWN. Warsaw 2011

Włodarczyk J. (1987), Designing apartments for the elderly, Silesian University of Technology, Gliwice

### Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,0
Classes requiring direct contact with the teacher	45	2,0
Student's own work (literature studies, preparation for classes - exercises, preparation of projects) <sup>1</sup>	55	2,0

<sup>1</sup> delete or add other activities as appropriate