STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Product Ergonimics		**1011105351011127536**

Field of study	Profile of study (general academic, practical)	Year /Semester
Engineering Management - Part-time studies -	**general academic**	**3 / 5**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
-	**Polish**	**elective**

Cycle of study:	Form of study (full-time,part-time)
First-cycle studies	**part-time**

No. of hours				No. of credits
Lecture: **10**	Classes: **10**	Laboratory: **-**	Project/seminars: **-**	**4**

Status of the course in the study program (Basic, major, other)	(university-wide, from another field)
other	**university-wide**

Education areas and fields of science and art	ECTS distribution (number and %)
technical sciences	**100 4%**
Technical sciences	**100 4%**

Responsible for subject / lecturer:

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Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Student has basic knowledge about a workplace in the realm of ergonomics and macroergonomics.
2	**Skills**	Student can discern their system, socio-technical, organizational, economic and non-technical aspects of the human-technical object system.
3	**Social competencies**	Student is aware of the need to shape products including physical, psychological features and capabilities of an individual.

Assumptions and objectives of the course:

Developing an understanding for theoretical aspects and practical skills of ergonomic product development.

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. Student has basic knowledge of products? lifecycle - [[K1A_W22]]
2. Student knows fundamental methods, techniques, tools and materials that are applied in solving simple engineering tasks relating building and machines? utilization - [[K1A_W24]]
3. Student has rudimental knowledge which is indispensable to comprehend non-technical conditions of engineering activity; knows basic health and safety procedures - [[K1A_W25]
4. Student knows some typical industrial technologies and has an extensive knowledge of building technologies and machines? utilization - [[K1A_W27]]

Skills:

1. Student can make use of analytic, simulation and experimental methods to formulate and deal with engineering tasks - [[K1A_U13]]
2. Student can discern its systemic, socio-technical, organizational, economic and non-technical aspects - [K1A_U14]]
3. Student can make a preliminary economic analysis in taking up engineering activities - [[K1A_U15]]
4. Student can make an identification of project activities and solve simple project tasks within the area of product - [[K1A_U17]]

Social competencies:

1. Student is conscious of the relevance and understands non-technical aspects and consequences of engineering activity, including an impact on a human being, and connected with it , responsibility for undertaken decisions - [[K1A_K08]]
2. Student is aware of the fact, that creating the product which fulfils the user?s needs, requires system approach - [[K1A_K09]]

Assessment methods of study outcomes

Formative assessment:

Classes: current evaluation of the assigned tasks (from 0 to 5 points);

Lectures: evaluations based on questions relating to the presented materials during the previous lectures.

Collective assessment:

Classes: average of partial exercises; credits given after achieving at least 3.0;

Lectures: written test (open questions or multiple choice) concerning material presented during the lecture

Course description

The notion of products and ergonomics of products. Criteria of product evaluation. Ergonomic design. Legal regulations and norms in ergonomic design. Tasks of ergonomics of products. Advantages of ergonomic product design. Disadvantages of low level of ergonomic product design. Methods, tools for ergonomic shaping of the product and evaluation of product ergonomic quality. Ergonomics and industrial design.

Didactic methods:

Lecture - conversational lecture

Exercises - classic problematic method, case study, staging method, idea exchange (brainstorming)

Basic bibliography:

1. Jabłoński J. (red.), Ergonomia produktu. Ergonomiczne zasady projektowania produktów, Wyd. Politechniki Poznańskiej, Poznań, 2006

2. Butlewski M., Projektowanie i ocena wyrobów. - Poznań: Wydaw. Politechniki Poznańskiej , 2013. - 106 s. ? podręcznik

3. Butlewski M., Ergonomiczne kryteria projektowania elementów bezpieczeństwa zorientowane na potrzeby osób starszych, Logistyka nr 5/2014, Instytut Logistyki i magazynowania, Poznań, 2014, ss.188-196 ISSN 1231-5478

4. Butlewski M., Heuristic Methods Aiding Ergonomic Design, Universal Access in Human-Computer Interaction. Design Methods, Tools, and Interaction Techniques for eInclusion, Lecture Notes in Computer Science Volume 8009, 2013, pp 13-20

5. Butlewski M., The issue of product safety in contemporary design. in: Safety of the system, Technical, organizational and human work safety determinants. Red. Szymon Salamon. Wyd. PCzęst. Częstochowa 2012. ISBN 978-83-63500-13-9, ISSN 1428-1600, pp. 112-120

Additional bibliography:

1. Tytyk E., Projektowanie ergonomiczne, Wydawnictwo Naukowe PWN, Warszawa, 2001

2. Butlewski M., Tytyk E., Inżynieria ergonomiczna dla aktywizacji osób starszych, Praca i Zabezpieczenie Społeczne, 50 - 59

3. Butlewski, M., Jasiulewicz-Kaczmarek, M., Misztal, A., Sławińska, M., Design methods of reducing human error in practice, (2015) Safety and Reliability: Methodology and Applications - Proceedings of the European Safety and Reliability Conference, ESREL 2014, pp. 1101-1106.

4. Norman, D. (2013). The design of everyday things: Revised and expanded edition. Basic Books (AZ).

5. Norman, D. A. (2004). Emotional design: Why we love (or hate) everyday things. Basic Civitas Books.

6. Desmet, P., Hekkert, P. (2007). Framework of product experience. International journal of design, 1(1).

Result of average student's workload

Activity	Time (working hours)
1. lecture	10
2. preparation for lecture credit	20
3. classes	10
4. preparation for classes	30
5. consultation	20
6. credits	2
7. literature studying	10

Student's workload

Source of workload	hours	ECTS
Total workload	102	4

Contact hours	42	2
Practical activities	10	0