

Card of Object

Description of Object:	
Code of course	
Name of course	Human factors methods
Version of course	2015/2016
A. Place of course in system of study	
Level of education	Intermediate
Degree of education	Third degree (PhD)
Kind of education	Full-time studies
Main field of study	Transport
Profile of study	General academic profile
Specialisation	Main field
Place of teaching of course	Faculty of Transport
Place of realization of course	Department of Information Technology and Mechatronics in Transport
Coordinator of course	Iwona Grabarek, PhD, Eng., Ass. Professor
B. General characteristic of object	
Unit of courses	Main field
Group of courses	general
Level of course	Intermediate
Kind of course	Faculty with choice limited
Language of instruction	English
Nominal semester	2
Academic year	2015/2016
Preliminary claims	The basic of ergonomics
Limit of number of student	12
C. Effects of education and manner of conduct of studies	

Purpose of object	The aim of the course is to familiarize students with the ergonomics methods using for assessment of human capabilities and limitations, human-machine interaction, machines and material design and physical work environment and possibility the of using them in transport systems
Methods of evaluation	Test, individual project/presentation - the use of the selected method in practice
Effects of education	Look – table 1
Form of didactic studies and number of hours on week-days	Lecture – 2 hours
Contents of education	<p>Basic concepts</p> <p>Domain of human factors and ergonomics: human capabilities and limitations, human-machine interaction, team work, tools, machines and material design, work and organizational design</p> <p>Categorization methods depending on the adopted criteria</p> <p>Description of the used methods:</p> <ol style="list-style-type: none"> 1. Physical methods (the topics include: measurement of discomfort, observation of posture, analysis of workplace risks, measurement of work effort and fatigue, assessing lower back disorder 2. Psychophysiological methods (the topics include: heart rate, heart rate variability, galvanic skin response, blood pressure, respiration rate, eyelid movements, and muscle activity 3. Behavioral – Cognitive methods (the topics include: observation and interviews, cognitive task analysis methods, human error prediction, workload analysis and prediction 4. Environmental methods (the topics include: thermal conditions, indoor lighting, noise and acoustic measures, vibration exposure <p>Selection methods of product assessment depending on the stage of the design cycle</p> <p>Tools and techniques</p> <p>The use of these methods in transport systems</p>
Methods of verification of effects of education	Look – table 1
Examination	no
Literature	<ol style="list-style-type: none"> 1. Guide to Methodology in Ergonomics – Designing for Human Use /ed. By Stanton N., Young M.S., Harvey C./ CRS Press 2014 2. Handbook of Human Factors Testing and Evaluation, /ed. By Charlton S.G., O'Brien T.G./ Lawrence Erlbaum Associates, Publishers 2002 3. Human Factors and Ergonomics Methods /edited by Stanton N. at all/, CRS Press 2005

www page of object	Does not have
D. Work of student	
Number of credits ECTS	2
Number of hour of student's work for achievement of effect of education – description	53 hours , including: 30 hours of lecture, studying the literature 10 hours, independently performing of the individual work 10 hours, presentation of work 1 h, consultation 2 hours
Number of credits ECTS – studies with participation of academic teacher	1,5 ECTS – 32 hours (30 lecture hours, 2 consultation hours)
Number of credits ECTS - practical studies	-
E. Additional informations	
Notes	
Date of last modernization	

Table 1

General academic profile study			
Objective effects		Main field effects	Effects from range of topic
Knowledge			
Effect:	The student has a basic knowledge of research areas related to the human factor	Tr3A_W07	T3A_W02
Code of effect:	W01		
Verification:	Test,		
Effect:	The student has a basic knowledge of the techniques and tools used to assess the human factor, the interaction with the machine / product, and the impact of the environment on human	Tr3A_W06 Tr3A_W09	T3A_W03
Code of effect:	W02		
Verification:	Test, analysis of individual case		
Effect:	The student has a basic knowledge concerning the possibility of applying selected ergonomics methods in transport systems	Tr3A_W10	T3A_W04 T3A_W05

Code of effect:	W03		
Verification:	Test, analysis of individual case		
Abilities			
Effect:	The student is able to assess the usefulness of specialized methods and tools to solve complex research problems in the field of human factors evaluation, select and apply the correct method and tools	Tr3A_U10 Tr3A_U19	T3A_U02 T3A_U04
Code of effect:	U01		
Verification:	Test, analysis of individual case		
Effect:			
Code of effect:			
Verification:			
Social competences			
Effect:	Student understands non-technical aspects and effects of engineering activities, including its impact on the environment and human and validity of responsibilities for decisions	Tr3A_K04	T3A_K04
Code of effect:	K01		
Verification:	analysis of individual case		