



## Subject card

Subject name and code	Technical Ergonomics, PG_00044768						
Field of study	Engineering Management						
Date of commencement of studies	October 2019	Academic year of realisation of subject				2021/2022	
Education level	first-cycle studies	Subject group				Obligatory subject group in the field of study Subject group related to scientific research in the field of study	
Mode of study	Part-time studies	Mode of delivery				blended-learning	
Year of study	3	Language of instruction				Polish	
Semester of study	5	ECTS credits				4.0	
Learning profile	general academic profile	Assessment form				exam	
Conducting unit	Department of Informatics in Management -> Faculty of Management and Economics						
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Marcin Sikorski					
	Teachers	mgr inż. Jerzy Grabosz prof. dr hab. inż. Marcin Sikorski					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	16.0	0.0	0.0	8.0	0.0	24
	E-learning hours included: 16.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours		Self-study	SUM	
	Number of study hours	24	8.0		68.0	100	
Subject objectives	Acquiring the knowledge of ergonomic methods and techniques that are needed not only by production organizers and managers, but also designers of technical, organizational and IT solutions.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_U08] analyses engineering and managerial solutions in decision-making processes, taking into account pro-quality and pro-environmental aspects, as well as safety of work processes	The student has the ability to assess and designing work places according to the principles of ergonomics, reserach results and good practices.			[SU1] Assessment of task fulfilment		
	[K6_W07] knows the basic conditions concerning norms and standards covering particular areas of the organization's functioning, including in particular those concerning technical resources and processes	The student has the ability to assess and designing work places according to the principles of ergonomics, reserach results and good practices.			[SW1] Assessment of factual knowledge		
	[K6_W12] has a basic knowledge of production management and occupational safety and ergonomics management, as well as information technologies necessary for engineering management	The student has knowledge about ergonomics of workplaces.			[SW1] Assessment of factual knowledge		
	[K6_U05] uses appropriate regulations, legal rules and normative systems in accordance with the principles of professional ethics in managerial activities	The student has the ability to evaluate and design work stations according to the principles of ergonomics.			[SU1] Assessment of task fulfilment		
	[K6_W11] has the basic knowledge of mathematics, physics and chemistry necessary to solve technical problems	The student has knowledge about physical loads appearing in positions work.			[SW1] Assessment of factual knowledge		

Subject contents	<p>1. Ergonomics - an introduction. The ergonomic system: human-technology-environment.</p> <p>2. Analysis of the physical load at workplaces. Techniques for assessment and visualization of physical loads. Reduction of physical burden at work stations.</p> <p>3. Designing the work space. Anthropometry and space requirements for typical workplaces. Software applications for spatial design and simulation.</p> <p>4. Ergonomics and organization of computer-aided work. Preventing overload in office work. Ergonomic requirements for software.</p> <p>5. Mental load at work stations. Methods of shaping the work content. Mental stress assessment methods at workplaces. Stress factors and preventive methods.</p> <p>6. Analysis of the factors of the physical work environment. Analysis of lighting conditions and electromagnetic field at workplaces. Analysis of acoustic conditions, vibrations, microclimate and air pollution at workplaces.</p> <p>7. Methods of occupational risk assessment at workplaces. System management of occupational safety in the enterprise.</p> <p>8. Assessment of the effects of new technologies on employees.</p> <p>9. Macroergonomics - shaping work organization and employer-employee relations.</p>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	project	60.0%	50.0%
	exam	60.0%	50.0%
Recommended reading	Basic literature	<p>Górska E. (2021). Ergonomia - projektowanie, diagnoza, eksperymenty. Wyd. Politechnika Warszawska, Warszawa.</p> <p>Nowacka W. (2014). Ergonomia i ochrona pracy. Wybrane zagadnienia. Wyd. SGGW Warszawa.</p> <p>Miłosz M. (2014). Ergonomia systemów informatycznych. Wyd. Politechnika Lubelska.</p>	
	Supplementary literature	<p>Boryczka M. (2014). Ergonomia i bezpieczeństwo pracy. Uniwersytet Ekonomiczny w Katowicach.</p> <p>Wieczorek S. (2005). Podstawy psychologii pracy i ergonomii. Wyd. Tarbonus.</p> <p>Wykowska M. (2010). Ergonomia. Wyd. AGH, Kraków.</p>	
	eResources addresses		
Example issues/ example questions/ tasks being completed	--		
Work placement	Not applicable		