GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	TECHNICAL ERGONOMICS, PG_00070731		
Field of study	Engineering Management		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2027/2028
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	at the university
Year of study	2	Language of instruction	Polish
Semester of study	4	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Informatics In Management -> Faculty of Management and Economics -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Marcin Sikorski	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	18.0	0.0	0.0	9.0	0.0	27

E-learning hours included: 0.0

eNauczanie source address: https://enauczanie.pg.edu.pl/moodle/course/view.php?id=46359

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	27	3.0	45.0	75

Subject objectives

Preparing students to evaluate and design worksplaces in accordance with ergonomic principles, based on knowledge of human workload in the workplace, organizational and ergonomic standards, as well as fostering attitudes related to the responsible application of regulations and standards to ensure workplace safety and efficiency.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_K02] is prepared to make competent and ethical decisions to create and maintain economic, social, and environmental values, demonstrating entrepreneurial actions.	is able to analyze, evaluate, and design workstations in accordance with ergonomic principles, as well as technical, organizational, and occupational safety requirements.	[SK3] Assessment of ability to organize work
[K6_U03] collaborates with others in solving interdisciplinary problems.	is able to collaborate with representatives of different specializations in analyzing and improving a workstation, taking into account technical, organizational, and ergonomic aspects.	[SU1] Assessment of task fulfilment
[K6_W07] knows and understands advanced methods for analyzing the management process in technical, legal, economic, financial, and social contexts.	knows and understands the principles of workplace ergonomics in the context of designing and organizing workstations in accordance with technical and organizational requirements, as well as ensuring safety and work efficiency.	[SW3] Assessment of knowledge contained in written work and projects

Subject contents	Course content – lecture 1. Ergonomics - Introduction. Ergonomic system: human - technology environment. 2. Evolution of work processes in the digital environment. 3. Analysis and reduction of physical load at workplaces. 4. Workspace design. 5. Ergonomics and organisation of computer-supported work. 6. Methods of assessing mental load and shaping the content of work. 7. Analysis of the factors of the material working environment (1). Analysis of lighting conditions and electromagnetic fields at workplaces. 8. Analysis of the factors of the material working environment (2). Analysis of acoustic conditions, vibrations, microclimate and air pollutants at workplaces. 9. Methods of occupational risk assessment at workplaces. 10. Systemic management of occupational safety in the enterprise. 11. Employer's obligations to ensure safe working conditions. 12. Assessment of the impact of the implementation of new technologies and AI in workplaces. 13. Macroergonomics - shaping the organisation of work and employer-employee relations. Course content – project 1. Job description. Assessment of the transparency of communication of working conditions. 2. Analysis and evaluation of physical load. Designing improvements. 3. Analysis and design of workspaces. Designing improvements. 4. Analysis and assessment of mental load. Designing improvements. 5. Analysis and shaping of the material work environment. Designing improvements. 6. Occupational risk analysis and assessment. Designing improvements. 7. Assessment of the impact of the implementation of new technologies and AI in workplaces. 8. Developing a plan for improving working conditions and employees wellbeing.
Prerequisites and co-requisites	
Assessment methods and criteria	

Subject passing criteria	Passing threshold	Percentage of the final grade
Problem-based questions	60.0%	50.0%
Project tasa	60.0%	50.0%

Recommended reading	
Basic literature	1. Górska E. (2018). Ergonomia - projektowanie, diagnoza, eksperymenty. Wyd. Politechnika Warszawska, Warszawa. 2. Wojsznis M. (2018). Ergonomia - ocena stanowisk pracy. Wydawnictwo: Politechnika Poznańska, 2018
Supplementary literature	1. Wykowska M. (2010). Ergonomia. Wyd. AGH, Kraków
eResources addresses	
Example issues/ example questions/ tasks being completed	• Methods of assessing manual load at workplaces • Principles of shaping software ergonomics during an IT project • Principles of proper organization of work with screen monitors
Practical activites within the subject	Not applicable

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