



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Ergonomic management systems

Course

Field of study

Safety Engineering

Area of study (specialization)

Ergonomics and Work Safety

Level of study

Second-cycle studies

Form of study

full-time

Year/Semester

2/3

Profile of study

general academic

Course offered in

Polish

Requirements

elective

Number of hours

Lecture

Laboratory classes

Other (e.g. online)

Tutorials

Projects/seminars

15

15

Number of credit points

2

Lecturers

Responsible for the course/lecturer:

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Faculty of Engineering Management

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Responsible for the course/lecturer:

Prerequisites

The student has basic knowledge of ergonomics and management



Course objective

The aim of the course is to learn the principles of building enterprise strategy and processes based on methods and ergonomic approach.

Course-related learning outcomes

Knowledge

knows the issues of ergonomics, macroergonomics and occupational safety as well as design methodologies including safety principles [P7S_WG_02]

knows issues related to the area of ergonomics and occupational safety, including issues related to management [P7S_WG_03]

knows the issues of risk analysis, threats and their effects in the work environment and knows their translation into management processes in the company [P7S_WG_05]

knows design issues in relation to products and management processes [P7S_WG_07]

knows the issues of management and management [P7S_WG_08]

knows the basic methods, techniques, tools and materials used to solve simple engineering tasks in the field of ergonomics [P7S_WK_03]

Skills

is able to see and formulate systemic and non-technical as well as socio-technical, organizational and economic aspects in engineering tasks [P7S_UW_03]

is able to use research, analytical, simulation and experimental methods to formulate and solve engineering tasks, also using information and communication methods and tools [P7S_UW_04]

is able to critically analyze the functioning and assess - in conjunction with the Safety Engineering existing technical solutions, in particular machines, devices, objects, systems, processes and services [P7S_UW_06]

can present, using properly selected means, a problem within ergonomics and occupational safety [P7S_UK_01]

Social competences

is aware of the recognition of cause-and-effect relationships in achieving the set goals and ranking the importance of alternative or competitive tasks within the management of processes in the enterprise [P7S_KK_01]

is aware of the understanding of non-technical aspects and effects of engineering activities, including its impact on the environment and the associated responsibility for decisions made [P7S_KK_03]

can plan and manage enterprise [P7S_KO_01]



Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Formative assessment - current assessment of tasks assigned, As part of the project, assessment of individual stages.

Assessment summarizing the coherence of the secured system.

Programme content

Benefits of an ergonomic approach to the management process. Systems supporting management through ergonomics. Welfare and its categories as a method of managing employees. The use of ergonomics in the processes of: job evaluation, differentiation of pay, valuation of legitimacy of changes at work stations, age management. Principles of building ergonomic assemblies and programs in enterprises. The choice of technology based on the exchange of responsibility in the CMO system. Selection of methods used in the enterprise. Integration of processes and key tasks of the company in an ergonomic approach.

Teaching methods

Classical problem method, Case study method

Bibliography

Basic

Tytek E., Projektowanie ergonomiczne, Wydawnictwo Naukowe PWN, Warszawa, 2001

Butlewski M., Projektowanie ergonomiczne wobec dynamiki deficytu zasobów ludzkich / Marcin Butlewski (WIZ) / red. Krystyna Bubacz - Poznań, Polska : Wydawnictwo Politechniki Poznańskiej, 2018 - 255 s.

Zarrin, M., & Azadeh, A. (2019). Mapping the influences of resilience engineering on health, safety, and environment and ergonomics management system by using Z-number cognitive map. *Human Factors and Ergonomics in Manufacturing & Service Industries*, 29(2), 141-153.

Thatcher, A., Nayak, R., & Waterson, P. (2020). Human factors and ergonomics systems-based tools for understanding and addressing global problems of the twenty-first century. *Ergonomics*, 63(3), 367-387.

Additional

Mrugalska, B. (2019). Lean and Ergonomics Competencies: Knowledge and Applications. In *International Conference on Human Systems Engineering and Design: Future Trends and Applications* (pp. 654-660). Springer, Cham.

Reinvee, M., & Mrugalska, B. (2018). Contemporary Low-Cost Hardware for Ergonomic Evaluation: Needs, Applications and Limitations. In *International Conference on Applied Human Factors and Ergonomics* (pp. 386-397). Springer, Cham.



Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,0
Classes requiring direct contact with the teacher	30	1,0
Student's own work (literature studies, preparation for classes/tutorials, preparation for tests, project preparation) ¹	20	1,0

¹ delete or add other activities as appropriate