



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Ergonomics in occupational health and safety management systems

### Course

Field of study

Safety Engineering

Area of study (specialization)

Integrated Management of Safety in Organization

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

0

Laboratory classes

0

Other (e.g. online)

0

Tutorials

15

Projects/seminars

0

### Number of credit points

1

### Lecturers

Responsible for the course/lecturer:

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Responsible for the course/lecturer:

Faculty of Engineering Management

Institute of Safety and Quality Engineering

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### Prerequisites

The student has a basic knowledge of ergonomics. Is able to identify ergonomic risk factors occurring in the workplace and is able to associate ailments and diseases of the musculoskeletal system with exposure to ergonomic hazards.

The student knows the principles and guidelines for shaping work safety, implemented through the application of system management requirements.

### Course objective

Improving the ability to perceive occupational hazards related to the way of performing work. Acquiring knowledge, skills and social competences in the field of building and maintaining an ergonomic program in a systemically managed organization.



### Course-related learning outcomes

#### Knowledge

- knows the issues of ergonomics, macroergonomics and occupational safety as well as design methodologies including safety principles,
- knows issues related to occupational health and safety management, related to the area of ergonomics and reduction of onerousness,

#### Skills

- is able to see and formulate system and non-technical as well as socio-technical, organizational and economic aspects in implemented engineering tasks,
- is able to prepare the necessary resources required to perform work in an industrial environment and knows the safety principles associated with this work and is able to force their application in practice,
- is able to present, using properly selected means, a problem that falls within the framework of ergonomics and occupational safety,
- is able to identify changes in requirements, standards and regulations, and determine the needs for the need to supplement knowledge,

#### Social competences

- is aware of the occurrence of cause-and-effect relationships, important in achieving the set goals and ranking the importance of alternative solutions,
- is aware of the importance of knowledge in solving problems in the field of safety engineering, ergonomics and continuous improvement,
- is aware of the responsibility for his own work and is ready to comply with the accepted principles of team work and to bear responsibility for jointly performed tasks.

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

#### Formative assessment:

- in the scope of tutorials: on the basis of reports (reports) on independently performed tasks.

#### Summative rating:

- in the scope of tutorials: average grade of partial grades for submitted reports (reports), colloquium to check knowledge.

### Programme content

The role, tasks and scope of ergonomic requirements in occupational health and safety management. Linking the guidelines of systemic management of occupational health and safety with ergonomic criteria. Ergonomic requirements in system requirements, with particular emphasis on: occupational health and safety policy, implementation of general and specific objectives, shaping awareness and competence, conducting training, building communication principles (principles of information flow),



purchasing and subcontracting. Identification and monitoring of non-compliance. Impact of work conditions on accidents at work, occupational diseases and near misses. Shaping system safety requirements in technical solutions.

### Teaching methods

Tutorials are conducted using the case method, based on solving practical examples (tasks). During the exercises, a round table discussion takes place. Preparation for tutorials requires student's independent work, including work with a book.

### Bibliography

#### Basic

1. Rączkowski K., Sułkowski Ł. (red.) (2014), Zarządzanie bezpieczeństwem. Metody i techniki, Wydawnictwo Difin, Warszawa.
2. Górny A. (2017), Total Quality Management in the Improvement of Work Environment - Conditions of Ergonomics, In: R.H.M. Goossens (ed.), Advances in Social & Occupational Ergonomics, AHFE 2017 International Conference, Advances in Intelligent Systems and Computing, vol. 605, pp. 91-100, Springer, Cham.
3. Górny A. (2020), The ergonomics of work conditions as force element of the OHS management, In: A. Murata, R.H.M. Goossens (eds.), AHFE 2019, Advances in Social and Occupational Ergonomics, Advances in Intelligent Systems and Computing, vol. 970, pp. 184-194.

#### Additional

1. Ejdys J. (red.) (2010), Kształtowanie kultury bezpieczeństwa i higieny pracy w organizacji, Oficyna Wydawnicza Politechniki Białostockiej, Białystok.
2. Koradecka D. (red.) (1997), Bezpieczeństwo pracy i ergonomia, t. I i II, Centralny Instytut Ochrony Pracy, Warszawa.

### Breakdown of average student's workload

	Hours	ECTS
Total workload	30	1,0
Classes requiring direct contact with the teacher	15	0,5
Student's own work (literature studies, preparation for exercises, preparation of reports on independent work, preparation for the colloquium) <sup>1</sup>	15	0,5

<sup>1</sup> delete or add other activities as appropriate