COURSE DESCRIPTION CARD - SYLLABUS

Course name
Safety in the Technique and Work Organization

Course

Field of study
Safety Engineering

Year/Semester
1/1

Area of study (specialization)
Integrated Management of Safety in Organization

Profile of study
general academic

Level of study
Second-cycle studies

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes

Other (e.g. online)

Tutorials
15

Projects/seminars

Number of credit points

2

Lecturers

Responsible for the course/lecturer:
Prof. Edwin Tytyk, Ph.D., D.Sc., Eng.

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Faculty of Engineering Management
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Responsible for the course/lecturer:
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Prerequisites

Student has basic knowledge of mathematics, physics, chemistry, knows the basic technologies of production processes, understands the basic concepts of organization and management sciences and the basics of work safety management.

Course objective

The aim of the course is to familiarize students with the issues of occupational safety in industrial applications and to familiarize themselves with the methods of shaping the material work environment, as well as the principles of diagnosing and designing safe technical facilities and safe work organization.

Course-related learning outcomes

Knowledge

Student:

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

2 - knows issues related to the area of ergonomics and occupational safety [P7S_WG_03]

3 - knows issues related to the life cycle of devices, facilities and technical systems in the context of ergonomic conditions [P7S_WG_06]

Skills

Student:

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

2 - can prepare the necessary resources to work in an industrial environment and knows the safety rules associated with this work and is able to enforce their application in practice [P7S_UW_05]

3 - can prepare in Polish and English at B2 level of the European Language Training Description System well documented work on ergonomic and occupational safety issues [P7S_UK_02]

Social competences

Student:

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

2 - can initiate activities related to the formulation and transfer of information and collaboration in society in the field of security engineering [P7S_KO_02]

3 - is aware of the responsibility for their own work and willingness to comply with the principles of teamwork and taking responsibility for jointly implemented tasks [P7S_KR_02]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Formative assessment:

a) in the scope of exercises: ongoing checking of knowledge and skills during exercises using analytical methods of ergonomic testing, assessment of individual tasks,

b) in the scope of lectures: based on a discussion of the material learned in previous lectures; bonus attendance at lectures.

Summative rating:

a) in terms of exercises: based on the average of partial grades of the forming phase

b) in the scope of lectures: passing the theoretical part in the form of a written test.

Programme content

Legal regulations regarding safety at work. Sources and types of threats in technology. Identifying hazards: mechanical, electrical, thermal, vibroacoustic, optical, chemical, biological. Designing protections against the adverse effects of the material work environment. Technical ways of reducing

noise, vibration, dust and radiation. Threats and safety measures in typical manufacturing processes and typical technological devices. Safety and work organization. Selection and rules of applying personal protection.

Teaching methods

Lectures with multimedia presentations.
Accounting and designing exercises on topics related to lectures.

Bibliography

Basic

1. Butlewski M., Tytyk E. (2011), Bezpieczeństwo w technice i organizacji pracy, Wydawnictwo Politechniki Poznańskiej, Poznań.
2. (praca zbiorowa) (1998), Charakterystyki zagrożeń stwarzanych przez maszyny produkcyjne. Wydawnictwo CIOP, Warszawa.
3. Horst W. (2004), Ryzyko zawodowe na stanowisku pracy. Część 1. Ergonomiczne czynniki ryzyka. Wydawnictwo Politechniki Poznańskiej, Poznań.
4. Rabenda A., Kowal E. (2008), Oddziaływanie szkodliwości przemysłowych na organizm człowieka. Oficyna Wydawnicza Uniwersytetu Zielonogórskiego.

Additional

1. Gierasimiuk J. (1984), Bezpieczeństwo pracy i ergonomia. Maszyny - stanowiska pracy. Część 1: Podstawowe kryteria, wymagania i zasady oceny, Wydawnictwo Centralny Instytut Ochrony Pracy (CIOP), Warszawa.
2. Koradecka D. (red.) (1999), Bezpieczeństwo pracy i ergonomia. Wydawnictwo CIOP, Warszawa.
3. Koradecka D. (red.) (2000), Zagrożenia czynnikami niebezpiecznymi i szkodliwymi w środowisku pracy. Tom 6. Pakietu edukacyjnego dla uczelni wyższych pt. Nauka o pracy - bezpieczeństwo, higiena, ergonomia, Wydawnictwo CIOP, Warszawa.

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, preparation for accounting and designing exercises, preparation for tests) [1]	20	1,0

[1] delete or add other activities as appropriate