



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Work assessments

### 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

1/1

Profile of study

general academic

Course offered in

polish

Requirements

elective

### Number of hours

Lecture

10

Laboratory classes

10

Other (e.g. online)

Tutorials

-0

Projects/seminars

10

### Number of credit points

3

### Lecturers

Responsible for the course/lecturer:

dr hab. Eng. Marcin Butlewski

Responsible for the course/lecturer:

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### Prerequisites

The student has basic knowledge of ergonomics and management

### Course objective

The aim of the course is to transfer knowledge and skills related to the analysis of work processes along with ergonomic assessment

### Course-related learning outcomes

Knowledge

knows issues of ergonomics, macroergonomics and work safety as well as methodologies for designing work processes



knows issues related to the area of ergonomics and occupational safety in the field of ergonomic load assessment

#### Skills

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

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

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

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

#### 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

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

#### 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

Descriptions and characteristics of work requirements - e.g. requirements characteristics (e.g. KLASP), Production characteristics and their use in job evaluation methods. Identification of ergonomic hazards and aggregate assessment tools (checklists, QECs, etc.). Load consequences for the musculoskeletal system. Methods of data collection and analysis with justification - test scenarios according to ISO 16710. Principles for assessing how work is performed. Assessment methods of NIOSH Li i Fili, CLI,

#### Teaching methods

Classical problem method, Case study method

#### Bibliography

Basic

Horst W.M., Diagnozowanie sposobu wykonywania pracy. Zagrożenia ergonomiczne, Wyd. Politechniki Poznańskiej, 2012



Butlewski M., Tytyk E., Bezpieczeństwo w technice i organizacji pracy. Wyd. Politechniki Poznańskiej, 2011

Lewicki L., Sadłowska-Wrzesińska J., Istotne aspekty BHP, Wydawnictwo WSL, Poznań 2015. Tytyk 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.

#### Additional

Butlewski, M., Czernecka, W., Szczepaniak, A., Pojasek, M., & Baran, M. (2019). Practical implications on ergonomic assessments resulting from EN16710-2—ergonomics methods. *Zeszyty Naukowe Małopolskiej Wyższej Szkoły Ekonomicznej w Tarnowie*, 43(3), 127-142.

Czernecka, W., Dewicka, A., & Butlewski, M. (2018). Zapewnienie bezpieczeństwa i ergonomii pracy poprzez rozwiązania IT wspierające GIG w koncepcji "ekonomii współdzielenia". *Zeszyty Naukowe. Organizacja i Zarządzanie/Politechnika Śląska*.

Horst W.M., Wprowadzenie do diagnozowania sposobu wykonywania pracy. Wybrane zagadnienia fizjologii, biomechaniki i antropometrii, Wyd. Politechniki Poznańskiej 2012

Górska E., Diagnoza ergonomiczna stanowisk pracy. Oficyna Wydawnicza Politechniki Warszawskiej, 1998

Koradecka D. (red.), Nauka o pracy bezpieczeństwo, higiena, ergonomia?. Pakiet edukacyjny dla uczelni wyższych, (8 tomów); Wydawnictwo Centralnego Instytutu Ochrony Pracy, Warszawa, 2000.

#### Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3,0
Classes requiring direct contact with the teacher	30	1,5
Student's own work (literature studies, preparation for classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	45	1,5

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