



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Ergonomics in work safety 2

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### Course

Field of study

Safety Engineering

Area of study (specialization)

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

2/4

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

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### Number of hours

Lecture

Laboratory classes

Other (e.g. online)

Tutorials

Projects/seminars

15

15

### Number of credit points

1

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### Lecturers

Responsible for the course/lecturer:

Ph.D., D.Sc., Eng. Marcin Butlewski, University  
Professor

Responsible for the course/lecturer:

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## Prerequisites

The student has basic knowledge of ergonomics (1)

## Course objective

The aim of the course is to put into practice the knowledge acquired during ergonomics 1

## Course-related learning outcomes

### Knowledge

knows the issues of technical safety, safety systems, health and safety as well as threats and their effects in the field of ergonomics [P6S\_WG\_02]

knows the issues of threats and their effects, risk assessment in the work environment as well as occupational accidents and diseases related to the way the work is performed [P6S\_WG\_03]

knows the issues of ergonomics, human ecology and environmental protection [P6S\_WG\_05]

knows the issues of quality engineering in relation to products and processes ensuring ergonomic working conditions [P6S\_WG\_07]

knows development trends and best practices in safety engineering regarding ergonomics [P6S\_WK\_03]

### Skills

is able to plan and carry out experiments, including ergonomic measurements and simulations, interpret obtained results and draw conclusions [P6S\_UW\_05]

is able to identify changes in requirements, standards, regulations and technical progress and the reality of the labor market, and based on them determine the need to supplement knowledge [P6S\_UW\_06]

is able to see the cause-and-effect relationships in achieving the set goals and rank the significance of alternative or competitive tasks [P6S\_UW\_07]

is aware of the recognition of the importance of knowledge in solving problems in the field of safety engineering in the field of ergonomics and continuous improvement [P6S\_UO\_01]

can initiate activities related to the formulation and transfer of information and cooperation in society in the field of ergonomics [P6S\_UU\_01]

### Social competences

is aware of the responsibility for own work and readiness to comply with the principles of teamwork and taking responsibility for jointly implemented tasks in shaping ergonomic working conditions [P6S\_KR\_02]

## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

During the exercises, the correctness of individual tasks is assessed.



Formative assessment of individual exercises and subsequent stages of projects presented to the teacher

Summative assessment - problem-solving exercises and project defense

### Programme content

Methods used in ergonomics and their general use.

Anthropometric design.

The use of ergonomic standards in design

Organization of work stations in accordance with ergonomic guidelines

Project to improve acoustic conditions at the workplace

Project to improve microclimatic conditions at the workplace

Project to improve unmechanized hand tools at the workplace

Project to improve lighting conditions at the workplace

### Teaching methods

Classical problem method, Case method, Discussions

### Bibliography

Basic

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

Tytyk E., Butlewski M. Ergonomia w technice. Wyd. Politechniki Poznańskiej, Poznań, 2011

Wejman M., Diagnozowanie środowiska pracy, Wyd. Politechniki Poznańskiej, Poznań 2012

Tytyk E., Projektowanie ergonomiczne, Wyd. PWN, Warszawa 2001

Additional

Carayon, P., & Smith, M. J. (2000). Work organization and ergonomics. Applied ergonomics, 31(6), 649-662

Clegg, C. W. (2000). Sociotechnical principles for system design. Applied ergonomics, 31(5), 463-477

Fedota, J. R., & Parasuraman, R. (2010). Neuroergonomics and human error. Theoretical Issues in Ergonomics Science, 11(5), 402-421



Górska E. Ergonomia - projektowanie, diagnoza, eksperymenty, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2002, s. 403

Górska E., Tytyk E., Ergonomia w projektowaniu stanowisk pracy. Podstawy teoretyczne, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 1998, str. 105

Jabłoński, J. (2005). Czy ergonomia jest nauką?. Wydawnictwo Politechniki Poznańskiej

### Breakdown of average student's workload

	Hours	ECTS
Total workload	35	1,0
Classes requiring direct contact with the teacher	30	0,5
Student's own work (literature studies, preparation for classes/tutorials, preparation for tests, project preparation) <sup>1</sup>	5	0,5

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