



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Ergonomics in medicine [S1IBio1E>EwM]

### Course

Field of study

Biomedical Engineering

Year/Semester

2/4

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-cycle

Course offered in

english

Form of study

full-time

Requirements

compulsory

### Number of hours

Lecture

15

Laboratory classes

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

15

### Number of credit points

2,00

### Coordinators

### Lecturers

### Prerequisites

The student should have knowledge of the operation and organization of enterprises, production or service plants. He/she should be aware of the risks in the workplace and be able to identify them. The student should be able to use regulations and normative acts.

### Course objective

The aim of the course is to familiarize students with issues related to the ergonomic organization of workplaces, workload and loads from work environment, as well as ergonomic diagnosis of workplaces.

### Course-related learning outcomes

Knowledge:

the student knows the ergonomic requirements for machines and working environment.

the student knows the methods of ergonomic diagnosis and workplace design.

the student knows the scope of the given discipline and contemporary trends in this area.

Skills:

the student is able to identify hazards and assess occupational risks in the workplace.

the student is able to assess the influence of work and factors occurring in the work environment on the employee and to evaluate the usefulness of the methods used for the assessment.

the student knows how to use regulations and normative acts to optimize solutions improving ergonomics of the workplace.

Social competences:

the student is aware of the role of the individual in solving the issues of ergonomic shaping of the working environment and makes efforts to convey, in a commonly understood way, his knowledge and

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

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Knowledge acquired as part of the lecture is verified on the basis of the final test during the last class in the semester. The test consists of 20 single-choice questions. In each question, 1 point is obtained for the correct answer. Passing threshold: 50%.

The knowledge and skills acquired during the project classes are verified by the presentation of the project developed by the students (in groups) and a discussion about the work.

### Programme content

Lecture: Basics of ergonomics, purpose and tasks, historical background, development of ergonomics in medicine. Directions and areas of expertise in ergonomics. Man in the process of work - basic ergonomic layout, rooms and equipment of the entity performing the therapeutic activity. Ergonomic organisation of the workplace, health problems related to ergonomic organisation of the workplace. The workload of a man. Ergonomic diagnosis of workplaces. Loads from the work environment. Occupational risk assessment, occupational hazards of medical personnel. Specific requirements to be met by hospital premises and equipment.

Project: Ergonomic diagnosis of a selected workstation related to the therapeutic activity (hazard analysis, analysis and assessment of physical load, mental load, analysis and design of workspace, analysis and shaping of work environment, analysis and assessment of occupational risk). Development of a plan to improve the working conditions of the selected workplace in accordance with ergonomic knowledge.

### Teaching methods

Lecture: multimedia presentation illustrated with examples.

Project: presentation of a project developed by students (in groups), solving practical problems, searching for sources, teamwork, discussion.

### Bibliography

Basic

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

Górska E., Ergonomia, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa, 2015 r.

Tytek E., Projektowanie ergonomiczne, PWN, Warszawa – Poznań, 2001 r.

Wojcisz M., Ergonomia – ocena stanowisk pracy, Wydawnictwo Politechniki Poznańskiej, Poznań 2018.

Additional

Marek K., Choroby zawodowe, Wydawnictwo Lekarskie PZWL, Warszawa, 2003.

Markiewicz L., Fizjologia i higiena pracy, Instytut Wyd. CRZZ, Warszawa, 1980.

Salvendy G., Carayon P., Human Factors and Ergonomics in Medicine, Inc. 2006

### Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	38	1,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	12	0,50