



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Ecolofy of human work [S1Log2>EPL]

### Course

Field of study

Logistics

Year/Semester

2/3

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-cycle

Course offered in

Polish

Form of study

full-time

Requirements

elective

### Number of hours

Lecture

15

Laboratory classes

30

Other

0

Tutorials

0

Projects/seminars

0

### Number of credit points

4,00

### Coordinators

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### Lecturers

### Prerequisites

The student defines and characterizes: basic concepts in the field of natural sciences, especially human and environmental sciences (at secondary school level), basic technologies of production processes, selected concepts of organization and management sciences. The student can obtain information from various sources and is able to actively participate in shaping safe working conditions and reduce anthropopressure on the natural environment.

### Course objective

Providing the student with knowledge related to ecological sciences and macroergonomics. Preparing the student to make decisions that lead to environmental effects and cause changes in working conditions. The acquired knowledge, skills and competences will allow the student to solve problems in the area of adapting work to the proper functioning of the human body and the requirements related to the formation of a good quality of life, depending on the natural environment.

### Course-related learning outcomes

Knowledge:

1. Student knows the basic relationships necessary to understand the non-technical (natural,

physiological and organizational) conditions of engineering activity and the basic principles of work health and safety in particular, taking into account the ecology of human work applicable in logistics [P6S\_WK\_08]

#### Skills:

1. Student can recognize in engineering tasks systemic, non-technical, socio-technical, organizational and economic aspects, including safety problems in logistics taking into account human ecology [P6S\_UW\_04]
2. Student can prepare measures necessary to work in an industrial environment and knows the principles of environmental safety associated with this work, including human safety and environmental issues in logistics [P6S\_UW\_05]
3. Student can choose the right tools and methods to solve the problem that fits the framework of logistics and supply chain management, as well as effectively use them, observing the principles of employee well-being and environmental protection [P6S\_UO\_02]
4. Student can identify changes in requirements, standards, regulations, technical progress and reality of the labour market and on their basis determine the needs for improving knowledge, in particular in the area of human ecology in logistics [P6S\_UU\_01]

#### Social competences:

1. Student is aware of the need for critical assessment and perception of cause-and-effect relationships in achieving the set goals and ranking the significance of tasks, , in particular in the field of human ecology in logistics [P6S\_KK\_01]
2. Student is aware of the need to initiate activities related to the formulation and transfer of information and cooperation in society in the field of human ecology in logistics [P6S\_KO\_02]

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: Formative assessments constitute 30% (15% a test from a lecture, 15% a written assignment on a given topic). General knowledge acquired as part of lectures is verified on the basis course exam (tasks include choosing the correct answer out of several available ones, filling in a sentence with an appropriate concept or term or providing a definition). Assessment issues constituting the basis of tasks are forwarded to students during the last lecture.

Laboratory: Skills acquired during laboratory classes are assessed on the basis of written tests before each exercise and on the basis of reports on their performance. The final grade is the average of the marks obtained from tests and reports, taking into account the coefficients related to their difficulty.

Passing threshold: 50% of points

### Programme content

The program covers the issues of ecology in human professional and non-professional life, with particular emphasis on environmental friendliness and ergonomics of human work.

### Course topics

Lecture: Basic concepts of ecology and human ecology; relationships between humans and the environment (natural, work). Links between human ecology and macroergonomics. The essence and measurement of human psychophysical abilities. Ambient conditions and the state and functioning of human body systems: nervous system, circulatory system, respiratory system, musculoskeletal system, sense organs. Product life cycle and environmental effects. Instruments of environmental policy: ecological conditions, legal instruments, economic instruments, marketing instruments. Management systems: in labour protection, in environment, integrated, in enterprises. Mutual applications of ergonomics and ecology to improve the work and life environment. The specificity of ecological problems in logistics work and companies.

Laboratory: The essence and methods of measuring human biological capabilities (morphological, physiological and psychomotor). The impact of environmental parameters on comfort and technical and economic results of human work

### Teaching methods

Lecture: Informative lecture with elements of conversation, illustrated with multimedia presentations.

Laboratory: experiment method.

## Bibliography

Basic:

1. Koradecka D. (red.), Bezpieczeństwo pracy i ergonomia, t. 1 i 2, CIOP, Warszawa, 1999
2. Budniak E., Mateja B., Sławińska M., Specyfika kompleksowego ujęcia edukacji w zakresie ergonomii w bezpieczeństwie pracy, Zeszyty Naukowe PP, nr 69/2016.
3. Horst W.M. (red.), Ergonomia z elementami bezpieczeństwa i ochrony zdrowia w pracy, t. 1 do 4, Wydawnictwo Politechniki Poznańskiej, Poznań, 2011.
4. Jabłoński J., Wybrane problemy zarządzania środowiskowego, Wydawnictwo Politechniki Poznańskiej, Poznań, 1999.
5. Mateja B., Ekologia. Wybrane zagadnienia, Wydawnictwo Politechniki Poznańskiej, Poznań, 2011.
6. Tytyk E., Projektowanie ergonomiczne, Wydawnictwo Naukowe PWN, Poznań, 2001.
7. Wolański N., Ekologia człowieka, t. 1, Wydawnictwo Naukowe PWN, Warszawa, 2006.

Additional:

1. Ustawa z dnia 27 kwietnia 2001 r., Prawo Ochrony Środowiska, Dz.U.2001 nr 62, poz. 627.
2. Hałas. Dopuszczalne wartości hałasu w środowisku pracy PN-N - 01307: 1994.
3. Światło i oświetlenie. Oświetlenie miejsc pracy PN-EN 12464-1: 2012.
4. Dahlke G., Drzewiecka M., Stasiuk-Piekarska A.K., Pozasłuchowy wpływ elektrowni wiatrowych na człowieka, Logistyka 5/2014, s. 290-300.
5. Stasiuk-Piekarska A., Drzewiecka M., Dahlke G., Influence of macroergonomic factors on production systems organizing in automotive industry [w:] Vink P. (red.), Advances in Social and Organizational Factors, 2020, s. 194-205.
6. Piaskowski M., Stasiuk A., Application of eco-balance in area of logistics - a case study, [w:] Golińska P., Fertsch M., Marx-Gómez J., Information Technologies in Environmental Engineering, Berlin 2011.
7. Stasiuk-Piekarska A., Włodarczyk A., Innovation in the pursuit of sustainable manufacturing, Proceedings of the 36th International Business Information Management Association (IBIMA), 4-5 November 2020, Granada, Spain, s. 7363-7370.

## Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,00
Classes requiring direct contact with the teacher	47	2,00
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation)	53	2,00