STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Ecology		**1011105331011120190**
Field of study	Profile of study (general academic, practical)	Year /Semester
Engineering Management - Part-time studies -	**(brak)**	**2 / 3**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
Quality Systems and Ergonomics	**Polish**	**obligatory**
Cycle of study:	Form of study (full-time,part-time)	
Second-cycle studies	**part-time**	
No. of hours		No. of credits
Lecture: **14** Classes: **-** Laboratory: **-** Project/seminars: **-**		**6**
Status of the course in the study program (Basic, major, other)	(university-wide, from another field)	
(brak)	**(brak)**	
Education areas and fields of science and art		ECTS distribution (number and %)
technical sciences		**6 100%**
Technical sciences		**6 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Student defines and characterizes basic terms from the area of natural science that relate to the functioning of the natural environment; basic technologies in production processes, chosen terms from the area of management science, ideas and objectives of ergonomics
2	**Skills**	Student is able to interpret changes occurring in the natural environment and work environment, knows how to apply methods of studying phenomena and dependencies between them, as well as he uses logical reasoning in purpose of correlating and evaluating observed phenomena
3	**Social competencies**	Student is aware of the role of problems related with the natural environment and he is willing to participate in the process of shaping wok conditions and the natural environment

Assumptions and objectives of the course:

The course is aimed at preparing the student for making aware choices and active fulfilling his role in his professional life while making decision that have consequences for the natural environment. The knowledge that the student obtains allows him to solve problems from the area of protection of the natural environment and problems correlated with it, which concern humanization of work.

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. Student should know a range of terms from the range of ecology, instruments of the environmental policy, risks for the biosphere, risks and rights for the ecological development as well as relations between work and natural environment - [K2A_W01]

2. Student should know about the role of man in actions for protecting the natural environment and the humanization of the process of work, which all relate to the formation of work conditions and organization of work, as well as ecosystems protection - [-K2A_W06]

3. Student should recognize and explain legal standards from the range of environmental protection and he should know legal and administrative instruments, as well as methods of influencing organization - [K2A_W12]

Skills:

1. Student should know social phenomena from the range of the organization, the environmental awareness, the environmental policy, legal documents and legal and economical environmental tools - [K2A_U01]

2. Student uses the knowledge from the range of ecology and organizational management for describing and analyzing processes and phenomena on the contact area of these disciplines of science and he forms own opinions and chooses methods of analyses - [K2A_U02]

3. Student recognizes the course of processes and phenomena of economy and law areas, which are connected with relations between the enterprise and the natural environment, he presents scientific hypotheses about these interactions and verifies them - [K2A_U03]

4. Student has the skill of using the obtained knowledge from the described range, widened with the critical analysis of efficiency and usability of the applied knowledge - [K2A_U06]

Social competencies:

1. Student notices causal dependences in the realization of put purposes and to rank the importance of alternative or competitive tasks within frames, for example integrated management systems - [K2A_K03]

2. Student is aware of the interdisciplinary character of the knowledge from the range of ecology, ergonomics and he has the skill to solve composite organizational problems and he creates interdisciplinary teams - [K2A_K06]

Assessment methods of study outcomes

Forming assessment:

a) in classes ? current evaluation of student?s activity during classes and presentation of chosen subjects prepared by groups of students;

b) during lectures ? basing on questions asked during the lecture, which refer to previous lectures on the subject.

Final assessment

a) Reports on classes

b) Final test.

Course description

Lectures

1. Notions used in ecological studies
2. Field of interest of the human ecology
3. The human ecology but the macroergonomics - relations
4. Environmental protection in the face of problems of polluting the biosphere
5. Instruments of the environmental management
6. The concept and assumptions of the sustainable development
7. Principles, laws and indicators of the eco-development

Classes

1. Environmental aspect of the humanization of work
2. Evolution of the relation man - environment
3. Forming of the workplace in the design-investment process
4. Environmental issues in the comprehensive macroergonomic evaluation
5. Influence of humanized forms of work organization on work environment
6. Social traps but environmental issues

Basic bibliography:

1. Górka K., Poskrobko B., Radecki W., Ochrona środowiska, PWE, Warszawa 2001
2. Jabłoński J., Wybrane problemy zarządzania środowiskowego, WPP, Poznań 1999
3. Kozłowski S., Ekorozwój. Wyzwanie XXI wieku, Wydawnictwo Naukowe PWN, Warszawa 2000
4. Mateja B., Ekologia. Wybrane zagadnienia, WPP, Poznań 2011
5. Mikuła B., Człowiek a organizacja. Humanizm w koncepcjach i metodach organizacji, Wydawnictwo Antykwa, Kraków 2000
6. Tytyk E., Projektowanie ergonomiczne, Wydawnictwo Naukowe PWN, Warszawa ? Poznań 2001
7. Wolański N., Ekologia człowieka t. I, Wydawnictwo Naukowe PWN, Warszawa 2006

Additional bibliography:

1. Kowalski Z., Kulczycka J., Ekologiczna ocena cyklu życia procesów wytwórczych (LCA), PWN, Warszawa 2007
2. PN ? EN ISO 14001:2005, Systemy Zarządzania Środowiskowego
3. Ustawa z dnia 27 kwietnia 2001 r., Prawo ochrony środowiska, Dz. U. 2001, nr 62, poz.627

Result of average student's workload

Activity	Time (working hours)
1. Lectures	14
2. Consultations	36
3. Preparation for the lectures	14
4. Preparation for the exam	26
5. Exam	2
6. Discussing conclusions of the exam	8

Student's workload		
Source of workload	**hours**	**ECTS**
Total workload	100	6
Contact hours	60	3
Practical activities	0	0