STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Protection of Environment		**1010614181010610271**

Field of study	Profile of study (general academic, practical)	Year /Semester
Mechanical Engineering	**(brak)**	**4 / 8**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
Food Industry Machines and Refrigeration	**Polish**	**obligatory**

Cycle of study:	Form of study (full-time,part-time)
First-cycle studies	**part-time**

No. of hours	No. of credits
Lecture: **10** Classes: **4** Laboratory: **-** Project/seminars: **-**	**2**

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	**2 100%**

Responsible for subject / lecturer:

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Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Student has a basic knowledge about the questions of environmental impacts of technical objects and technologies
2	**Skills**	Student is able to integrate the interdisciplinary information acquired; he can interpret them, draw conclusions, formulate opinions
3	**Social competencies**	Student is aware of the importance of human activities in relationship with the environment, he understands their general aspects and consequences

Assumptions and objectives of the course:

Acquaintance of basic threats for environment resulting from the different industrial activities and the ways of environment elements protection, especially resulting from the production and exploitation of the transportation means

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

Knowledge:

1. Has a basic knowledge of machines and technology impact on the natural environment and global energy balance - [K1A_W20]
2. Has a basic knowledge about the main sources of air and water pollution and ways of their protection - [K1A_W21]
3. Has a basic knowledge about the noise and wibrations sources and their influences on envorinment - [K1A_W24]
4. Knows the environmental impacts of the energetic sector - [-]
5. Knows, how to treat the waste generated by the motorization and end-of-life vehicles - [-]
6. Has a basic knowledge about the economic and law ascpects of environmental protection - [-]

Skills:

1. Is able to assess the material, environmental and labor input for an assembly of a simple machine, is able to apply basic technical standards for unification, safety and recycling - [K1A_U20 K1A_U21]

Social competencies:

1. Is aware of and understands the importance and impact of non-technical aspects of mechanical engineering activities and its impact on the environment and responsibility for own decisions - [K1A_K02]

Assessment methods of study outcomes

Pass on the base of the control work (written test)

Course description
Environment, its elements and interrelations between them. Legal aspects of environment protection. Water, its resources, main sources of pollution, water protection. Air, kinds of air pollution, water protection. Noise and vibration in industry and transportation. Energetics and its influence on pollution of different environmental elements. Used elements of machines and vehicles and their utilization. Wastes management. Economical aspects of environment protection.
Basic bibliography:
Additional bibliography:

Result of average student's workload

Activity	**Time (working hours)**
1. Presence at the lectures	15
2. Lectures content repetition and comprehension	1
3. Consultations	1
4. Preparation to test	10
5. Presence at the test	2

Student's workload

Source of workload	**hours**	**ECTS**
Total workload	29	2
Contact hours	18	2
Practical activities	0	0