STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Enviromental ecology**		Code **1010101111010135238**
Field of study **Civil Engineering First-cycle Studies**	Profile of study (general academic, practical) **(brak)**	Year /Semester **1 / 1**
Elective path/specialty **-**	Subject offered in: **Polish**	Course (compulsory, elective) **elective**
Cycle of study: **First-cycle studies**	Form of study (full-time,part-time) **full-time**	
No. of hours Lecture: **30** Classes: **-** Laboratory: **-** Project/seminars: **-**		No. of credits **2**
Status of the course in the study program (Basic, major, other) **(brak)**	(university-wide, from another field) **(brak)**	

Education areas and fields of science and art	ECTS distribution (number and %)
technical sciences	**1 50%**
Technical sciences	**1 50%**
natural sciences	**1 50%**
Biology	**1 50%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Basic knowledge of the biology and ecology of the range of material from high school
2	**Skills**	The ability to use literature and self-education, making observations, drawing conclusions, working in a group.
3	**Social competencies**	Is aware of the need to learn, able to work in a group.

Assumptions and objectives of the course:

Familiarize students with the basic concepts of ecology and opportunities for practical application of knowledge.

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

Knowledge:

1. The student knows the basic ecological concepts and the reasons for the threat of modern civilization - [K_W01]
2. The student knows the aims and objectives of sustainable development, sustainable development and international environmental organizations, and environmental - [K_W17]
3. The student knows the exhaustible and non-exhaustible natural resources and has a knowledge of the effects of negative impact of human activity on the environment - [K_W17]

Skills:

1. The student can use knowledge of laws relating to the ecology (national and international) in their professional activity - [K_U19]
2. Student is able to anticipate and identify the effects of contamination of surface water and groundwater, soil and atmosphere - [K_U16]
3. Student is able to rationally manage natural resources, identify and interpret the causes, effects and ways to remedy the environmental degradation - [K_U16]

Social competencies:

1. The student is aware of the desirability of the study and control of the natural environment - [K_K03]
2. The student is aware of and ability to apply appropriate treatments aimed at reducing environmental contamination (microbiological and physico-chemical) - [K_K07]
3. The student understands and is aware of the validity of the social effects of engineering on the environment and knows the basics of building the tasks in accordance with the principles of sustainable development - [K_K08]

Assessment methods of study outcomes

Throughout the semester, students are consulted (1.5 h / wk.).

During the exam is done written exam covering material (issues) discussed in lectures (W1,17; U16,19; K3,7,8).

- Completion of the session, and the amendment shall be in writing (or the written test).

Obtaining credit points (30-50 questions = max. 30-50 sec.). For each answer you can get 0-1 points. Approximately 50% of the maximum points must be obtained. Detailed information on scoring and rating scale are given before crediting.

Course description

Place ecology in Construction; ecology and sustainable development; history of the ecology; basic ecological concepts and terms (species, population, habitat, biocenosis, ecosystem); in ecology. Environmental crisis - a threat to the world. Development model of the world. International organizations related to ecology and demography. Sustainability - sustainability. History of sustainability and sustainable development; Poland and sustainable development; Environmental law and environmental protection. Key documents ecology and environmental protection (U Thant's report, the UN Conferences, Kyoto Climate Summit); International environmental conventions. Biocenosis. Ecological succession. Biotic and abiotic factors. Liebig's law of the minimum, the right to tolerance Shelford; Environmental groups. General characteristics of the population structure of the population. Biosphere. Trophy and saprobia. Natural and anthropogenic pollution (gas and dust). Smog, ozone depletion, the greenhouse effect, acid rain. Natural resources (exhaustible and inexhaustible).

Learning methods: information lecture, lecture with multimedia presentation, problem lecture.

Basic bibliography:

1. Lampert W., Sommer U. Ekologia wód śródlądowych. PWB, 2001
2. Odum EP. Podstawy ekologii. PWN Warszawa, 1982.
3. Wiąckowski KS. Ekologia ogólna. 2008.

Additional bibliography:

1. Trojan P. Ekologia ogólna. 1981.

Result of average student's workload

Activity	Time (working hours)
1. Participation in lectures (contact hours)	30
2. Additional work of its own; eg. the library, etc. (independent work)	6
3. Participation in the consultation (contact hours)	2
4. Preparing to pass (independent work)	10
5. Participation in the exam (contact hours)	2

Student's workload

Source of workload	hours	ECTS
Total workload	50	2
Contact hours	34	1
Practical activities	0	0