STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Introduction to Ecology		**1010701311010710044**
Field of study	Profile of study (general academic, practical)	Year /Semester
Environmental Protection Technologies	**general academic**	**1 / 1**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
-	**Polish**	**obligatory**
Cycle of study:	Form of study (full-time,part-time)	
First-cycle studies	**full-time**	
No. of hours		No. of credits
Lecture: **1** Classes: **-** Laboratory: **-** Project/seminars: **-**		**1**
Status of the course in the study program (Basic, major, other)	(university-wide, from another field)	
other	**university-wide**	
Education areas and fields of science and art		ECTS distribution (number and %)

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	The information about the beginnings of the Earth and particular geospheres. The construction of the biosphere. The fundamental concepts in ecology. The laws of nature and the various ecosystems. The environmental ethics. The impact of anthropogenic activities on the environment. The classical and alternative energy sources.
2	**Skills**	Student has the ability to present scientific issues.
3	**Social competencies**	Student understands the need for further education and enhance the personal competencies.

Assumptions and objectives of the course:

To familiarize the students with the most important concepts in ecology, the construction of the biosphere, the laws that govern nature and ecosystems, and dependencies between them. Presentation the impact of anthropogenic activities on the biosphere. To familiarize the students with the environmental ethics and inspire a sense of being co-responsible for the state of the environment and the development of civic involvement for environment protection.

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

Knowledge:

1. Student has knowledge of the construction, advantages and disadvantages of alternative energy sources and has ability to determine the parameters of their work - [[K_W04, K_W16]]
2. Student knows the principles of environmental protection - [[K_W05]]
3. Student has knowledge about the scenarios in the area of diminishing natural resources - [[K_W11]]
4. Student has a general knowledge necessary to understand the social, economic, legal and other non-technical factors of engineering activities, such as the devastation of the environment by human activities or overcrowding - [[K_W14]]

Skills:

1. Student finds information from literature, databases and other sources related to ecology, environmental protection and alternative energy sources. Student interprets and joins information into conclusions and formulates opinions - [[K_U01]]
2. Student is able to prepare the elaboration of the protection and the environment problems and presents it in the suitable form - [[K_U04, K_U05]]
3. Student uses correct terminology and nomenclature in the field of environmental technology - [[K_U08]]

Social competencies:

1. Student is aware of the importance of non-technical aspects and effects of engineering activities, including the impact on the environment and the associated decisions with it - [[K_K02]]
2. Student understands the need to inform the public e.g. through the mass media about the profitable and unprofitable aspects of the activities related to the production and use of chemicals. Student can deliver such information in a manner commonly understood - [[K_K07]]

Assessment methods of study outcomes

Partial evaluation of knowledge connected with the preparation for lectures and discussion during lectures.

Evaluation of written test after completing a series of lectures.

Course description

History of the Earth with the emergence of life. The construction and characterization of particular geospheres (atmosphere , lithosphere , hydrosphere, biosphere). The basic concepts in ecology such as: biocenosis , species, populations , habitat , producer, consumer, ecological systems . The laws of nature and ecosystems. The aspect of environmental ethics. The problems of environmental devastation associated with human activity. The impact of human activities on ecosystems including devastation of the environment (acid rain) and extinction of many species of plants and animals. Decay of the ozone shield and its consequences. The greenhouse effect and its impact on particular ecosystems . The perspectives of further development of our civilization in the age of the running out of natural energy resources and the developing pollution of the biosphere. The classical and alternative energy sources and their impact on environmental degradation.

Basic bibliography:

1. T. Stefanowicz, Wstęp do ekologii i podstaw ochrony środowiska, Wyd. Politechniki Poznańskiej, ISBN 83-7143-066-3, Poznań 1996.

2. I. Wojciechowski, Ekologiczne podstawy kształtowania środowiska, Państwowe Wydawnictwo Naukowe, ISBN 83-01-07349-7, Warszawa 1987.

Additional bibliography:

1. W.M. Lewandowski, Proekologiczne źródła energii odnawialnej, Wyd. Naukowo-Techniczne, ISBN 83-204-2546-8, Warszawa 2001.

Result of average student's workload

Activity	Time (working hours)
1. Lecture	15
2. Consultation to the lecture	2
3. Preparation of the presentation	4
4. Exam preparation	5
5. Exam	2

Student's workload

Source of workload	hours	ECTS
Total workload	28	1
Contact hours	19	0
Practical activities	0	0