COURSE DESCRIPTION CARD - SYLLABUS

Course name

Elective subject. Global ecological problems

Course

Field of study	Year/Semester
Environmental Protection Technologies	I/2
Area of study (specialization)	Profile of study
Ecotechnology	general academic
Level of study	Course offered in
Second-cycle studies	Polish
Form of study	Requirements
full-time	elective

Number of hours

Lecture	Laboratory classes	Other (e.g. online)
15	0	0
Tutorials	Projects/seminars	
0	0	

Number of credit points

1

Lecturers

Responsible for the course/lecturer:

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phone: (61) 665 2806

Responsible for the course/lecturer:

Prerequisites

The student has the knowledge, skills and social competences resulting from the passing of the first-cycle studies in the field of Environmental Protection Technologies or related fields of study, as well as the first semester of the second-cycle studies in the field of Environmental Protection Technologies; in particular, he participated with a positive result in the introductory course in ecology (subject: Introduction to ecology, during the 1st semester of 1st-cycle studies, in the field of Environmental Protection Technologies), and therefore:

Knowledge:

W1) The student knows the basics of geochemistry, especially issues related to the formation of the Earth and the formation of the modern image of the Earth's geosphere

W2) Knows the basic concepts of ecology, the laws governing nature and its individual components (ecosystems)

W3) Knows the rules and principles of sustainable development in relation to human productive activity; knows about the existence of a close relationship between human economic activity and the state of the natural environment

W4) Additionally, he has knowledge of biology and physical and economic geography within the scope of the secondary school program

Skills:

U1) The student is able to derive knowledge about the world around him from various sources and use it properly

Social competences:

K1) The student understands the need and has the habit of constantly learning and improving his knowledge and qualifications

Course objective

The aim of the course is to familiarize students with the most important global environmental problems and the challenges they pose to modern society, as well as to the modern economy and industry. Knowledge will be transferred in an integrated manner, showing the interrelationships between the occurrence of ecological problems and human activity. Such an approach is to be a contribution to stimulating, and then appropriate shaping of ecological awareness in the society

Course-related learning outcomes

Knowledge

1. The student knows the most important global ecological problems, and also knows and understands the sources and reasons for their appearance, as well as the effects caused by them (K_W01, K_W04, K_W11, K_W14)

2. Has knowledge of the impact of human economic activity on the natural environment and knows the methods of environmental protection against the negative effects of this impact (K_W05, K_W11, K_W14)

Skills

1. The student is able to formulate and justify his own opinion on practical environmental and ecological problems (K_U11, K_U18)

2. Is able to combine the observed facts and phenomena, and correctly interpret and describe the mechanisms of their mutual interaction (K_U11, K_U17)

Social competences

1. The student is aware of the most serious global ecological problems (K_K04)

2. Demonstrates the need to systematically expand and deepen his knowledge of global ecological problems (K_K03)

3. Understands the need and in practice carries out the task of informing and educating the society in the field of sources and consequences of occurrence of environmental problems (K_K01, K_K06)

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

The form of the final verification of learning outcomes/obtaining the grade from the subject, is chosen by students during the first class in the semester. Two possible variants to choose from, are: independent preparation of a paper on a topic given by the teacher (a different topic for each student) or a final colloquium, consisting of 4-8 open-ended problem questions of varying degrees of difficulty (variously scored) - assessment threshold: 50 % of total points. As the final grade from the subject will be accepted the grade issued for the prepared paper, or the grade from the final colloquium, issued on the basis of the number of points obtained. Ratings will be issued using the scale of grades in force at Poznan University of Technology

Programme content

Lecture

1. Factors disturbing the harmony between man and nature

2. Demographic growth - its consequences and impact on global ecological conditions

3. Global climate change

4. Problems of air, water and soil quality (greenhouse effect, ozone hole, deforestation, desertification and land erosion)

5. Ecological disasters

6. Threats to biodiversity in the world of flora and fauna

7. Management of the Earth's geosphere resources

8. Waste management

9. Interrelationships between global ecological phenomena

Teaching methods

The lecture is based on multimedia presentations containing relevant examples along with their discussion and explanation; the presentations additionally contain extensive illustrative material (photos) for individual issues discussed

Bibliography

Basic

1. M. Graniczny, W. Mizerski, Katastrofy przyrodnicze, PWN, Warszawa, 2007

2. C.D. Schönweise, Klimat i człowiek, Wydawnictwo Prószyński i S-ka, Warszawa, 1997

3. J. Cowie, Zmiany klimatyczne: przyczyny, przebieg i skutki dla człowieka, Wydawnictwa Uniwersytetu Warszawskiego, Warszawa, 2009

4. A. Budnikowski, Ochrona środowiska jako problem globalny, Polskie Wydawnictwo Ekonomiczne, Warszawa, 1998

5. A. Bogda, C. Kabała, A. Karczewska, K. Szopka, Zasoby naturalne i zrównoważony rozwój, Wydawnictwo Uniwersytetu Przyrodniczego we Wrocławiu, Wrocław, 2010

6. W.M. Lewandowski, Proekologiczne odnawialne źródła energii, WNT, Warszawa, 2012

7. J. Falkowski, Geografia rolnictwa świata, PWN, Warszawa, 2001

Additional

1. M. Żbik, Kosmiczne katastrofy w historii Ziemi, Wydawnictwo Książka i Wiedza, Warszawa, 1995

2. D. Archer D, Globalne ocieplenie. Zrozumieć prognozę, PWN, Warszawa, 2010

3. A. Józefaciuk, C. Józefaciuk, Erozja i melioracje przeciwerozyjne, Biblioteka Monitoringu Środowiska, PIOŚ, IUNG, Warszawa, 1996

4. A. Dziewulska-Łosiowa, Ozon w atmosferze, PWN, Warszawa, 1989

Breakdown of average student's workload

	Hours	ECTS
Total workload	30	1,0
Classes requiring direct contact with the teacher	18	0,6
Student's own work (literature studies as part of preparation for current lectures, preparation for the final colloquium or writing a paper on a given topic) [1]	12	0,4

[1] delete or add other activities as appropriate