



## Environmental Protection

ECTS: 2.00

### SUBJECT MATTER CONTENT

#### LECTURE

Issues related to the state of the environment in Poland and in the world as well as its protection. Polish and European Union environmental policy. Organization and legislation on environmental protection in Poland and in the world. The importance of environmental monitoring. Current zoological problems. Chemical, biological and physical factors existing in the environment and the effect of air, soil and water pollutants on the animal health. Risk assessment and health effects of exposure to contaminants and exposure biomarkers. Ecotoxicological hazards connected with animal husbandry. Global environmental hazards. Climate change - World and Polish standpoint. Techniques of prevention and reduction of industrial gases and dusts.

#### CLASSES

Sources and types of air, water and soil pollution. Consequences of air, water, soil contamination - impact on human and animal health. Types of waste and disposal methods (storage, thermal methods and alternative combustion techniques). The use of recycled materials. Electromagnetic and ionizing radiation and their effect on human and animal health. The water cycle in the biosphere. Classification of water in the light of Polish law. Examination and assessment of water quality. The wastewater as a water pollution: the methods of municipal and industrial wastewater treatment. Energy resources and renewable energy sources. Food as an indicator of environmental pollution. The role of the veterinarian in environmental protection.

#### TEACHING OBJECTIVE

The aim of the course is to provide the student the general information about environmental protection as well as the impact of anthropogenic activities on environmental degradation. Indication of the most important environmental actions taken up both local as well as worldwide range. Study sources, types and effects of air, water, soil contaminants (pollutants), and their impact on the environment as well as human and animal health.

**DESCRIPTION OF THE LEARNING OUTCOMES OF THE COURSE IN RELATION TO THE DESCRIPTION OF THE CHARACTERISTICS OF THE SECOND LEVEL LEARNING OUTCOMES FOR QUALIFICATIONS AT LEVELS 6-8 OF THE POLISH QUALIFICATION FRAMEWORK IN RELATION TO THE SCIENTIFIC DISCIPLINES AND THE EFFECTS FOR FIELDS OF STUDY:**

**Symbols for outcomes related to the discipline:**

R/WA\_P7S+++

**Symbols for outcomes related to the field of study:**

B.W15. +, K.1.+ , A.U15. +, B.U22. +, A.U7. +, K.4.+ , C.W2. +, K.8.+ , A.W22. +

**LEARNING OUTCOMES:**

**Legal acts specifying learning outcomes:**  
**682/2020**  
**Disciplines:** Veterinary science  
**Status of the course:** Obligatoryjny  
**Group of courses:** A - przedmioty podstawowe  
**Code:** ISCED 0841  
**Field of study:** Veterinary Medicine  
**Scope of education:**  
**Profile of education:** General academic  
**Form of studies:** full-time  
**Level of studies:** uniform master's studies  
**Year/semester:** 1/2

**Types of classes:** Lecture, Classes  
**Number of hours in semester:** Lecture: 15.00, Classes: 15.00  
**Language of instruction:** Polish  
**Introductory subject:** biology, chemistry  
**Prerequisites:** A sufficient level of knowledge gained from the courses and introductory.

**Name of the organisational unit conducting the course:** Katedra Farmakologii i Toksykologii  
**Person responsible for the realization of the course:** dr wet. Dariusz Barski  
**e-mail:** [dariusz.barski@uwm.edu.pl](mailto:dariusz.barski@uwm.edu.pl)

**Additional remarks:**

**Knowledge:**

W1 – The student possess knowledge of basic environmental hazards related to economic and social development and is able to connect them to local or global environmental problems. It will identify natural and anthropogenic polluting factors, which allow to define the risks and indicate possible options to prevent the effects of environmental contamination.

**Skills:**

U1 – Skills will allow to combine theoretical and practical knowledge. Expand the knowledge on the ability to identify the various sources of the pollutants, their proper description and risks assessment. Allow monitoring and evaluation of the environment state. Help to organize and plan research on environmental pollution and its impact on human and animal health.

**Social competence:**

K1 – Student should perceive the relationship between cleanliness of the environment and people and animals health. Proceed according to standards and ethical principles. Be aware of the consequences of decisions. Possess the ability to apply the knowledge in the environment protection as well as in reduction the effects of its contamination.

**TEACHING FORMS AND METHODS:**

Classes(W1;U1;K1;):A multimedia presentation of particular issues and discussion on this subject.

Lecture(U1;K1;):Informative lectures with a multimedia presentation.

**FORM AND CONDITIONS OF VERIFYING LEARNING OUTCOMES:**

Lecture (Colloquium test) - During the semester when the subject of "Environmental protection" is carried out, the verification of the achievement of learning outcomes in the scope of the material discussed during the lectures is an integral part of colloquium conducted as part of the classes. Therefore form and conditions of passing the classes also apply to passing the lectures. Student who fail the colloquium can repaeat it twice. Note: In case of a top-down suspension of full-time classes and the necessity of e-learning, the methods of verifying the achievement of learning outcomes declared in the syllabus may be changed adequately to the situation. -

Classes (Colloquium test) - To pass the colloquium student is obliged to obtain at least 65% points. The grading scale isa based on following point levels: : 94-100%, degree: excellent (5,0); 87-93%, degree: very good (4,5); 80-86%, degree: good (4,0); 73-79%, degree: satisfactory (3,5); 66-72%, degree: sufficient (3,0); 65%, degree: unsatisfactory=fail (2,0). Student who fails the colloquium can retake it twice. Note: In case of a top-down suspension of full-time classes and the necessity of e-learning, the methods of verifying the achievement of learning outcomes declared in the syllabus may be changed adequately to the situation. -

**BASIC LITERATURE:**

1. Manahan Stanley E., (tłum. Boczoń W., Koroniak H.), *Toksykologia środowiska. Aspekty chemiczne i biologiczne.*, Wyd. PWN Warszawa, R. 2018
2. Górka K., Poskrobko B., Radecki W., *Ochrona środowiska. Problemy społeczne, ekonomiczne i prawne.*, Wyd. PWE Warszawa, R. 2001
3. Siemiński M., *Środowiskowe zagrożenia zdrowia. Inne wyzwania.*, Wyd. PWN Warszawa, R. 2007
4. Internetowy Sytem Aktów Prawnych, *Ustawa z dnia 27 kwietnia 2001 roku "Prawo ochrony środowiska"*, Wyd. Dz.U.2001, nr 62 poz. 627, R. 2001
5. Dobrzańska B., Dobrzański G, Kiełczewski D., *Ochrona środowiska przyrodniczego*, Wyd. PWN Warszawa, R. 2020
6. Krajowy Zjazd Lekarzy Weterynarii, *Kodeks etyki lekarza weterynarii*, Wyd. Krajowa Izba Lekarsko-Weterynaryjna, R. 2008
7. Internetowy System Aktów Prawnych, *Ustawa o ochronie przyrody*, Wyd. Dz.U. 2004 nr. 92 poz 880, R. 2004
8. Internetowy System Aktów Prawnych, *Ustawa z dnia 14 grudnia 2012 o "Odpadach"*, Wyd. Dz.U. 2013, poz. 21, R. 2012

9. Internetowy System Aktów Prawnych, *Rozporządzenie Ministra Infrastruktury z dnia 25 czerwca 2021 r. w sprawie klasyfikacji stanu ekologicznego, potencjału ekologicznego i stanu chemicznego oraz sposobu klasyfikacji stanu jednolitych części wód powierzchniowych, a także środowiskowych norm jakości dla substancji priorytetowych*, Wyd. Dz.U. 2021 poz. 1475, R. 2021

**SUPPLEMENTARY LITERATURE:**

1. Siemiński M., *Środowiskowe zagrożenia zdrowia.*, Wyd. PWN Warszawa, R. 2001

