Fields of studies	Biology
Name of the education module	Human ecology
Language of lecture	English
Type of education module (obligatory / optional)	optional course
Level of education module	1st degree
Form of study	part-time studies
For the year of study	III
For the semester	5
Number of ECTS points per contact / non-contact	4 (1,44/2,56)
Name of responsible person	PhD Robert Stryjecki
Offering the object unit	Department of Zoology and Animal Ecology
Aim of module	To familiarize with the current issues of human health hazards arising from environmental pollutants, to identify methods for hazard identification, risk assessment and clinical pathology, and to present ways to reduce the negative impact of pollution on the human body. Knowing the ways of absorption into the body, metabolism and health hazards caused by selected environmental pollutants. Methods of elimination of pathogenic environmental pollution Emission of chemical substances by the human body. Mechanisms of the impact of poisons on the human body. Impact of environmental risks on human reproduction. Presentation of teratology; teratogenesis mechanisms, nomenclature and classification of congenital defects. The stages of carcinogenesis.
Educational outcomes	Knowledge:
	W1. The student has knowledge of the ways of knowledge absorption into the body, metabolism and health risks caused by environmental pollutants selected.
	W2. has knowledge about possible clinical pathologies of all human systems and reproduction, arising on the psychological and somatic level under the influence of negative environmental factors
	Skills:
	U1. can use and integrate theoretical knowledge in the knowledge of methods of hazard identification, estimation of risk of loss of health in relation to environmental physical and biological agents
	Social competence:
	K1. has a deeper awareness of the level of their knowledge of the health risks associated with environmental pollution
Initial and additional requirements	knowledge of the basic issues of human functional anatomy, and the basics of immunology, physiology and biochemistry.
Content of the education module	Specificity of environmental health hazards, basic concepts: impact, biological effect, impression, hazard, risk, substances and factors endangering health. Health threat in Poland and in the world, the main causes of mortality in Poland. Risk classification and factors influencing its size. Identification of environmental health hazards. Ways of collecting and analyzing epidemiological data. Epidemiological studies in environmental health hazards. Clinical pathologies resulting from pollution of the natural environment. Biomarkers of exposure, biomarkers of biological effects and health effects.
Recommended list of readings or obligatory reading	1. Human Ecology-Contemporary Research and Practice Editors: Bates, Daniel G., Tucker, Judith (Eds.) Springer 2010 2. Human Ecology: Following Nature's Lead Frederick R. Steiner Island Press, 2002 3. Understanding Human Ecology: A systems approach to sustainability Robert Dyball (Author), Barry Newell Routledge 2015 4. Case Studies in Human Ecology Editors: Bates, Daniel G., Lees, Sarah H. (Eds.) Springer1996 5. Current Trends in Human Ecology 6. Priscila Lopes (Author, Editor), Alpina Begossi (Editor) Cambridge Scholars Publishing 2009 7. Structural Human Ecology: New Essays in Risk, Energy, and Sustainability Thomas Dietz (Pr (Editor) Washington State University Press 2013
Planned forms /activities/ teaching methods	lectures - multimedia presentations, laboratory and laboratory exercises using multimedia equipment, presentation videos. Calculation models for estimating the risk of loss of health Review of multimedia, multimedia presentations by students on the negative impact of environmental factors on health

Methods of verification and documentation of achieved learning outcomes	VERIFICATION METHODS: W1 - partial written test in the form of open questions (concepts to be explained), written credit - open questions. W2 - partial written test in the form of open questions and questions on the final written test U1 - assessment of a multimedia presentation prepared by the student on the negative impact of environmental factors on health K1 - discussion during classes and lectures - assessment of student's activity DOCUMENTATION OF ACHIEVED LEARNING EFFECTS in the form of: stage works: partial credit and final works: credit, archiving in paper form, archiving of student's presentation in electronic form Criteria for evaluation: Obtaining a percentage of the required knowledge, skills and competences:2,0 – < 51,0% 3,0 – 51-60% 3,5 – 61-70% 4,0 – 71-80% 4,5 – 81-90% 5,0 – 91-100 %
Elements and importance affecting the final grade	The final grade is influenced by: exercise tests 2 x 10% final written test 60% evaluation of a multimedia presentation prepared by the student 20%,
Counting points ECTS	**CONTACT** Lecture and final test (12 hrs /0.48 ECTS), exercises (21 hrs /0.84 ECTS), consultations (3 hrs./0.12 ECTS), **Total – 36 hrs /1.44 ECTS** **NON-CONTACT** Preparation for exercises (13 hrs /0.52 ECTS), preparation for 2 mid-term tests (20 hrs /0.8 ECTS) preparation for the final test (21 hrs /0.84 ECTS) preparation of a presentation (10 hrs /0.4 ECTS), **Total – 64 hrs /2.56 ECTS**
Working hours related to activities requiring direct participation of an academic teacher	Lecture and final test (12 hrs), exercises (21 hrs), consultations (3 hrs),
Degree of directional effect:	W1 – Bl1_W04 W2 – Bl1_W05 U1 – Bl1_U01 K1 - Bl_K02