Załącznik do Uchwały nr 59/2020-2021
Senatu UP w Lublinie z dnia 25 czerwca 2021 r.

Karta opisu zajęć (sylabus)

Nazwa kierunku studiów	Environmental protection
Nazwa modułu, także nazwa w języku angielskim	Environmental stressors
Język wykładowy	English
Rodzaj modułu	Optional
Poziom studiów	Bachelor's
Forma studiów	Non-stationary
Rok studiów dla kierunku	III
Semestr dla kierunku	6
Liczba punktów ECTS z podziałem na kontaktowe/niekontaktowe	3 (1,6/1,4)
Tytuł naukowy/stopień naukowy, imię i nazwisko osoby odpowiedzialnej za moduł	dr hab. Robert Stryjecki
Jednostka oferująca moduł	Department of Zoology and Animal Ecology
Cel modułu	To teach students about the types of environmental stressors (natural, anthropogenic, abiotic, biotic) and the responses of living organisms, with particular emphasis on humans, to these stressors. Presentation of different concepts of stress and environmental stressors. Discuss the risks to the environment, organisms and human populations from environmental stressors.
Efekty uczenia się dla modułu to opis zasobu wiedzy, umiejętności i kompetencji społecznych, które student osiągnie po zrealizowaniu zajęć.	Knowledge:
	W1. Knows techniques for estimating the effects of environmental stressors, knows and understands the effects of basic environmental stressors (natural, anthropogenic, biotic, abiotic) and the resulting consequences for the environment, living organisms and humans.
	Skills:
	U1. Is able to determine the impact of environmental stressors (biotic and abiotic, including toxic substances) on the environment, living organisms and humans and is able to plan and conduct experiments demonstrating the scale and threats resulting from the impact of various environmental stressors.
	Social competences:
	K1. The graduate is ready to update the acquired knowledge by following the latest literature on the subject and has the ability to cooperate while performing tasks in a team.
Wymagania wstępne i dodatkowe	Podstawowe wiadomości z zoologii, botaniki, fizjologii i ekologii. Basic knowledge of zoology, botany, physiology and ecology.
Treści programowe modułu	Historical concepts of stress and environmental stressors. Neurohormonal basis of stress. Syndrome of defense

	responses to environmental stressors. Homeostasis, heterostasis, rheostasis, enantiosis, allostasis - dynamic, changing mechanisms of the stress response. Biotic and abiotic factors causing stress. Tolerance and resistance of organisms to stress. Impacts of environmental stressors at different temporal and spatial scales. Environmental stressors and ecology. Levels of stress response: biosphere, landscape, ecosystem, biocenosis, population, individual, elements of the individual. Environmental stressors and environmental quality. Stressors - psychological approach. Stress-related diseases. Environmental stressors acting in the urban environment.
Wykaz literatury podstawowej i uzupełniającej	Basic literature: 1. Steinberg C.E.W. Stress Ecology. Environmental Stress as Ecological Driving Force and Key Player in Evolution. Springer Dordrecht, Springer Science+Business Media B.V. 2012. 2. Evans G.W. Environmental Stress. CUP Archive, 1984. Supplementary literature: 1. Articles from different journals. 2. Materials provided by the instructor.
Planowane formy/działania/metody dydaktyczne	Lectures: conducted in the form of multimedia presentations prepared in PowerPoint, using a computer and a multimedia projector. The classic informational lecture is complemented by films on the topic discussed. Exercises: are mostly practical in nature; students work with biological samples collected in the field. In addition to material collected in the field, solid microscopic and macroscopic preparations, wet preparations, dissected animal specimens, and display cases are used. Supplementary aids include: transparencies, transparencies, tables, and models of organisms. In addition, short videos are demonstrated. The exercise room is equipped with microscopes and audiovisual equipment (monitors, microscope camera, projectoscope, laptop, multimedia projector, video equipment).
Sposoby weryfikacji oraz formy dokumentowania osiągniętych efektów uczenia się	Ways of verifying the achieved learning outcomes: W1 - partial tests /test and open questions/, questioning during exercises, written final assessment. U1 - passing practical tasks during laboratory exercises K1 – discussion during classes and lectures – assessment of student activity DOCUMENTING ACHIEVED LEARNING OUTCOMES in the form of: stage work: partial tests and final work: assessment, archiving in paper form, Detailed criteria for assessing credit and control work Criteria used for evaluation: Obtaining the appropriate percentage of the sum of points assessing the level of required knowledge/ skills: 2.0 <51% 3.0 - 51-60% 3.5 - 61-70%

	4.0 - 71-80% 4.5 - 81-90% 5.0 > 91-100%
Elementy i wagi mające wpływ na ocenę końcową	The final grade is influenced by: partial tests on material covered during lectures and classes 2 x 45% = 90% rating of the prepared presentation 10%
Bilans punktów ECTS	Contact lecture (15 h/0.6 ECTS), exercises (20 hours/0.8 ECTS), consultations (3 hours/0.12 ECTS), resit examination (2 hours/0.08 ECTS). Total – 40 hours/1.6 ECTS Non-contact preparation for exercises and their passing (25 h/1.0 ECTS) studying literature (5 h/0.2 ECTS) Preparation of presentation (5 h/0.2 ECTS) A total of 35 h/1.4 ECTS
Nakład pracy związany z zajęciami wymagającymi bezpośredniego udziału nauczyciela akademickiego	lecture (15 h), exercises (20 h), consultations (3 h), resit examination (2 h) Total – 40 hours
Odniesienie modułowych efektów uczenia się do kierunkowych efektów uczenia się	W1 – OS_W05 U1 – OS_U02 K1 – OS_K01