Додаток 3
до наказу від 23.03.2023 р. № 244

COURSE SYLLABUS

«General Ecology»

Degree of higher education - Bachelor
Specialization 101 "Ecology"

Educational programme «Ecology »
Academic year _2__, semester 3__
Form of study _full-time
Number of ECTS credits__5_____
Language of instruction __English__

Lecturer of the course	**___Ass. Prof. Rubezhniak Iryna**
Contact information of the lecturer (e-mail)	**___rubezhnyak60@nubip.edu.ua**
Course page on eLearn	**https://elearn.nubip.edu.ua/course/view.php?id=843** **https://elearn.nubip.edu.ua/course/view.php?id=2431**

COURSE DESCRIPTION

After taking over the course students are gaining knowledge about fundamental ideas of Ecological Science: doctrine about biosphere and ecosystems, sources and flaws of energy issues in ecosystems, influence pattern of ecological factors, biotic relation between bionts, species and populations; skills to define natural-resources potential of ecosystem and socioeconomic analyses of their macroeconomic activity.

Competencies of the educational programme:

Integrative competency (IC): Ability to solve complex specialized problems and solve practical problems in the field of ecology

General competencies (GC): K01. Knowledge and understanding of the subject area and professional activity

K07. The ability to act socially responsibly and consciously

K08. Ability to conduct research at an appropriate level

Professional (special) competencies (PC): K14. Knowledge and understanding of theoretical foundations of ecology, environmental protection and balanced nature management

Program learning outcomes (PLO) of the educational programme: _Ecology___

COURSE STRUCTURE

Topic	Hours (lecture/laboratory, practical, seminar)	Learning outcomes	Tasks	Assessment
Semester 1				
Module 1				
Topic 1 Introduction to Ecology	2/2	Know history, object, aims and methods. Hierarchy	Submitting laboratory work	**10**
Topic 2	4/4	Analyze environmental factors	Submitting laboratory	

Habitat. Environmental factors			work	
Topic 3 Abiotic factors-climatic factors	4/4	Understand the classification of abiotic factors: geological, geographical, hydrological, and climatologically parameters	Submitting laboratory work	**10**
Topic 4 Adaptation of plants to the environment	2/2	Know different adaptation of plants to the abiotic factors of the environment	Submitting laboratory work Completing independent work (including in eLearn)	**10**
Topic 5 Animal adaptation to the environment	6/6	Know different types of adaptation of animal to the abiotic factors of the environment	Submitting laboratory work	**10**
Topic 6 Mechanism of adaptation	6/6	Understand mechanism of adaptation of living organisms	Submitting laboratory work Completing independent work (including in eLearn)	**10**
Topic 7 Interactions between members of one species	4/4	Know and understand interactions between members of one species: mating and parental care, group formation. cooperative interactions - dominance and subordination,	Taking tests, writing essays. Submitting laboratory work	**10**
Tests				**30**
Total for Module 1				**100**
Module 2				
Topic 8 Interaction between members of different species: positive and negative	**2/2**	Know and understand positive or beneficial interactions: mutualism, competition, amensalism	Submitting laboratory work	**10**
Topic 9 Negative interactions between members of different species	**2/3**	Know and understand negative interactions: parasitism, predation, scavengering	Submitting laboratory work	**10**
Topic10. Biotic Community	**2/3**	Know main principles of structure of biotic community	Submitting laboratory work	**10**

			Completing independent work (including in eLearn)	
Topic 11 Biotic community (part II)	**2/3**	Know the structure of primary and secondary succession	Submitting laboratory work	**10**
Topic 12. Ecosystem	**2/3**	Analyze Ecosystems and it's functioning. Know type of organisms, food chain and its types	Submitting laboratory work Completing independent work (including in eLearn)	
Topic 13 Species in ecology	**2/2**	Know the different mechanism of species formation	Submitting laboratory work	**10**
Topic 14 Ecological rules and lows	**2/2**	Know and understand all ecological rules	Submitting laboratory work	**10**
Topic 15 Population and Its Characteristics	**2/5**	Know definition of population and its characteristic: definition, size, birth rate, dead rate, emigration, migration, caring capacity, age distribution	Submitting laboratory work Taking tests, writing essays.	**10**
Tests				**30**
Total for Module 1I				**100**
Module III. Biosphere and biogeochemical cycles				
Topic 16 Structure of biosphere	**2/3**	Understand of structure of biosphere, lithosphere. atmosphere and structure. hydrosphere	Submitting laboratory work Completing independent work (including in eLearn)	**10**
Topic 17 Water cycle	**2/3**	Know biogeochemical cycling,. types of biogeochemical cycling, water reservoirs, residence times, changes over time	Submitting laboratory work	**20**
Topic 18 Nitrogen cycle in nature	**2/3**	Know nitrogen transformations in soil, water, and air. nitrogen	Submitting laboratory work	**20**

		fixation, assimilation, nitrification, ammonification, denitrification, . how increase in nitrogen affects ecosystem		
Topic 19 Carbon cycle	**2/3**	Know carbon cycle in the atmosphere. in the biosphere. in the ocean	Submitting laboratory work Taking tests, writing essays.	**20**
Tests				**30**
Total for Module III				**100**
Topic 20. The environmental pollution		Know types of household wastes, fresh wate,. land use and agricultural development,. industrialization, energy. environmental threats to human health	Submitting laboratory work	**10**
Topic 21. Air pollution		Know the types of air pollution, main air pollutants, control of air pollution	Submitting laboratory work	**20**
Topic 22. Water pollution		Know and understand causes of water pollution, effects of water pollution, effects on animal health, effects on human health	Submitting laboratory work	**20**
Topic23. Soil contamination. Global ecological effects		Understand types of soil pollution, causes of soil pollution, effects of soil pollution, control of soil pollution, global ecological effects	Submitting laboratory work Taking tests, writing essays.	**20**
Tests				**30**
Total for Module IV				**100**
Total for 1 semester				**70**
Exam				**30**
Total for course				**100**

ASSESSMENT POLICY

Policy regarding deadlines and resits:	Assignments submitted after the deadline without valid reasons will be graded lower. Resetting of modules will be allowed with the permission from the lecturer and in the presence of valid reasons (e.g. medical reasons).
Academic honesty policy:	Cheating during tests and exams is strictly prohibited (including the use of mobile devices). Coursework and research papers must contain correct citations for all sources used.
Attendance policy:	Class attendance is mandatory. In case of objective reasons (such as illness or international internships), individual learning may be allowed (in online format by the approval of the dean of the faculty).

SCALE OF ASSESSMENT OF STUDENT KNOWLEDGE

Student rating, points	**National grade based on exam results**	
	exams	**credits**
90-100	excellent	passed
74-89	good	
60-73	satisfactory	
0-59	unsatisfactory	not passed

RECOMMENDED SOURCES OF INFORMATION

1. Ecology: Concepts and Applications/ Anna Sher and Manuel Molles.-2022.-435 p.
2. Ecology: International Edition. Fifth Edition/ William D. Bowman, Sally D. Hacker- Oxford University press,2020.-744 p.
3. Ecology: A Very Short Introduction/ Jaboury Ghazoul.- - Oxford University press,2020.-176 p.
4. Rubezhnyak I.G. Workbook to laboratory works of discipline “Fundamentals of ecology” for students of higher education institute of III - IV accreditations levels, direction 101 “Ecology”. – Kiev, 2018.- 50 p.
5. Rubezhnyak I.G. Workbook to laboratory works of discipline “Fundamentals of ecology” for students of higher education institute of III - IV accreditations levels, direction 101 “Ecology”. – Kiev, 2016.- 40 p.