

competences	<p>understanding the history and patterns of data domain development, its place in the overall knowledge system about nature and society and in the development of society, techniques, and technologies, to use different types and forms of motor activity for recreation and healthy lifestyles.</p> <p>GC15. The ability to act on the basis of ethical grounds (reasons).</p> <p>SC06. The ability to act socially responsible and consciously.</p> <p>SC13. To understand the principles and rules of law and to use them in a professional activity.</p>
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Learning outcomes	Teaching and learning methods	Forms of assessment (continuous assessment CAS, final assessment FAS)
LO 02. To keep moral, cultural, scientific values and to increase achievements of society, to use different types and forms of effective activity for maintaining a healthy lifestyle.	Interactive lectures with presentations, discussions, workshops.	Written assignment (CAS), practical assessment (CAS), online tests (FAS)
LO 08. To apply management methods to ensure the effectiveness of the organization.	Interactive lectures with presentations, discussions, workshops, teamwork	Written assignment (CAS), practical assessment (CAS), online tests (FAS)

ASSESSMENT AND GRADING

Ranges of points corresponding to grades	il score (points) for all types of learning activities	ECTS grading scale	The national grading scale	Allocation of grade points	100% Final assessment as a result of Final test (50%) and Continuous assessment (50%). 50% Final exam: online tests 50% Continuous assessment: • 30% practical assessment (including problem sheets, reporting on fieldwork, and case-studies); • 20% written individual task with oral presentation
	90-100	A	excellent		
	82-89	B	good		
	74-81	C			
	64-73	D	satisfactory		
	60-63	E			
	35-59	FX	Unsatisfactory (with the exam retake option)		
	0-34	F	Unsatisfactory (with mandatory repetition of the course)		

Course policy	<p>Students are expected to attend classes regularly, to get to class on time and stay for the duration of the class. In the case of absence, students will be required to submit all assignments to make up for the missed classes. Students are also expected to come to class having read all the required material and being ready to productively participate in the class discussions. Written assignments should be submitted before the specified deadlines.</p>
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COURSE STRUCTURE AND CONTENT

Lecture 1	Subject and tasks of ecology. Biosphere	Workshop 1-2	Economic levers of eco-friendly MSW management in Ukraine. World best practices and their adaptation	Self-study	The V.I. Vernadsky teaching on biosphere. Noosphere concept. Modern ideas about the noosphere development paradigm. Modern research on the global biosphere models creation (project "Biosphere -2")
Lecture 2	Environmental factors	Workshop 3-4	Identification of nitrates contain in food		Conference in Rio de Janeiro, 1992. Convention on Biological Diversity. Ukraine's commitments in the area of biodiversity conservation and examples of their implementation.
Lecture 3	Natural resources	Workshop 5-7	Environmental taxes paid calculation for the company's emissions to atmosphere from stationary sources of pollution		Ecological system. Energy in ecological systems. The concept of food chains. Natural and artificial selection. Typical sea, river, forest, desert food chains. Anthropogenic factors of food chains change
Lecture 4	Sustainable development	Workshop 8-9	Environmental taxes paid calculation for the company's pollutants discharges directly into water		Big and small elements cycle The carbon cycle Nitrogen cycle Phosphorus cycle Sulfur cycle
Lecture 5-6	Economic development and environmental factors	Workshop 10-11	Environmental taxes paid calculation for the company's waste disposal in specially designated areas		Ecological audit: essence, tasks, types. Environmental audit as a tool to increase enterprise's competitiveness and investment attractiveness.
Lecture 7-8	Environmental management	Workshop 12-15	Statistic methods in ecology		"Silent spring" and the impact of this book on understanding the environment problem in the mid-1970s.
		Workshop 16	Control work		

RECOMMENDED READING

Compulsory	<ol style="list-style-type: none"> 1. Lester R. Brown. (2011). <i>World on the Edge: How to Prevent Environmental and Economic Collapse</i>. NY: W. W. Norton Company. 2. Weisman, A. (2007). <i>The World Without Us</i>. NY: Thomas Dunne Books. 3. Clarke, G. (2013). <i>Elements of Ecology</i>. NY: The New Press. 4. Odum, E. (2004). <i>Fundamentals of Ecology</i>. NY: Cengage Learning. 5. Klein, N. (2014) <i>This Changes Everything: Capitalism vs. The Climate</i>. NY: Simon Schuster. 6. Tykomyrova, T (Eds.). (2019). <i>Nitrate content in food</i>. Kharkiv: NTU "KhPI". 	Additional	<ol style="list-style-type: none"> 7. Carson, R. (1962). <i>Silent Spring</i>. NY: Houghton Mifflin. 8. Flannery, T. (2006). <i>The Weather Makers</i>. NY: Grove Press / Atlantic Monthly Press 9. Cole, Matthew (2007) . <i>Economic growth and the environment, published in Handbook of Sustainable Development</i>, Edward Elgar Publishing Limited, Cheltenham 10. Justice Mensah (2019) <i>Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review</i>, Cogent Social Sciences, 5:1, 1653531 - : https://doi.org/10.1080/23311886.2019.1653531 Pedro Mateus Das Neves (2018), Literature Review On S 11. Lam, David (2005). <i>How the World Survived the Population Bomb: An Economic Perspective</i>, published in The Economics of Sustainable Development, W.E. Upjohn Institute for Employment Research, Michigan
Academic integrity			
Students are expected to adhere to the Code of Ethics of Academic Relations and Integrity” of NTU “KhPI”.			
The content of this syllabus is consistent with the Ecology course program.			