ECOLOGY COURSE SYLLABUS					
Code and name of specialty					
Program name	Management of Organizations and Administration / Business Administration	Department	Chemical Engineering and Environmental Protection		
Type of program	Educational and Professional	Language of instruction	English / Ukrainian		
LECTURER					

Tetiana Tykhomyrova, tetiana.tykhomyrova@khpi.edu.ua



PhD, Associate Professor, Associate Professor of Chemical Engineering and Environmental Protection Department (NTU "KhPI").

Work experience - 12 years. Authored and co-authored over 50 scientific and educational works. Fluent in English and Ukrainian.

Courses: Sustainable Development, Grant writing and International Cooperation in Ecology, Hydrology, Soil Science,

GENERAL DESCRIPTION OF THE COURSE								
Summary	This course is based on environmental knowledge acquisition for individual active environmental position formation that c an be used in professional activities							
Course objectives	 to format knowledge, skills and abilities of interaction laws between living matter and the environment and interaction between organisms at the global, regional and local levels. to format understanding the causes and mechanisms of changes in the environment under human impact and the need to form a sustainable economic development. to develop ecological thinking 							
Types of classes and control	d Lectures, workshops, consultations. The course ends with a final test.							
Term 5								
Student workload (credits) / Type of course5 / OptionalLectures (h				16	Workshops (hours)	32	Self-study (hours)	102
Program	GC02. The ability to maintain and to increase the moral, cultural, scientific values and to increase achievements of society by							

competences 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. GC15. The ability to act on the basis of ethical grounds (reasons). SC06. The ability to act socially responsible and consciously. SC13. To understand the principles and rules of law and to use them in a professional activity.						
Learning outcomes				Teaching and learning me	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 presentation 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 presentation discussions, workshops, teamwork	Written assignment (CAS), practical assessment (CAS), online tests (FAS)		
			ASSE	ESSMENT AND GRADING		
Ranges of	I score (points) for all types of learnin g activiti es	ECTS grading scale	Th	e national grading scale		 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-
points	90-100	А	excellent of g		Allocation	studies);
correspon ding to	82-89	В			of grade points	• 20% written individual task with
grades	74-81	С				oral presentation

satisfactory

Unsatisfactory (with the exam retake option)

Unsatisfactory (with mandatory repetition of the

course)

64-73

60-63 35-59

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Course policy 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.

COURSE STRUCTURE AND CONTENT						
shop	Economic levers of eco-	The V.I. Vernadsky teachir				
		Nie een bene een een te Maede				

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		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 Biolog Diversity. Ukraine's commitments in the area of biodiversity conserv- and examples of their implementation.	
Lecture 3	Natural recourses	Workshop 5-7	Environmental taxes paid calculation for the company's emissions to atmosphere from stationary sources of pollution	Self-study	Ecological system. Energy in ecological systems. The con of food chains. Natural and artificial selection. Typical sea river, forest, desert food chains. Anthropogenic factors of 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 understandir the environment problem in the mid-1970s.	
		Workshop 16	Control work			
RECOMMENDED READING						

Compulsory	 Lester R. Brown. (2011). World on the Edge: How to Prevent Environmental and Economic Collapse. NY: W. W. Norton Company. Weisman, A. (2007). The World Without Us. NY: Thomas Dunne Books. Clarke, G. (2013). Elements of Ecology. NY: The New Press. Odum, E. (2004). Fundamentals of Ecology. NY: Cengage Learning. Klein, N. (2014) This Changes Everything: Capitalism vs. The Climate. NY: Simon Schuster. Tykhomyrova, T (Eds.). (2019). Nitrate content in food. Kharkiv: NTU "KhPl". 	Additional	 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</i>: Literature review, 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</i>: An Economic Perspective, 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.				