NATIONAL UNIVERSITY OF LIFE AND ENVIRONMENTAL SCIENCES OF UKRAINE

Department of forest mensuration and forest management

APPROVED
Education and Research Institute of Forestry and Landscape-Park Management
June 11, 2026

CURRICULUM OF ACADEMIC DISCIPLINE

Sustainable forestry

Area of knowledge Agriculture, forestry, fisheries and veterinary medicine

Specialty H4 Forestry

Academic programme Forestry

Education and Research Institute of Forestry and Landscape-Park Management

Developed by: Candidate of Agricultural Sciences, PhD Yevhenii Khan
(position, academic degree, academic title)

Kyiv – 2026

Description of the course. The course is focused on trends and directions of sustainable forestry development in the world, as well as in Europe and Ukraine. Within this course will be analysed: general concepts, terminology and definitions of sustainable forestry; trends in the development of forest management in Ukraine; general trends and directions of global development, with a special focus on Europe and Ukraine; prerequisites, theoretical foundations and problems of sustainable development; relevance, goals and objectives for the global sustainable development goals; determining the relationship of global sustainable development goals with forestry and criteria and indicators of sustainable forest management. During lessons will a review of the criteria and indicators of sustainable forest management, a critical analysis of the content of the criteria and indicators, a comparison of the relevance of the criteria for the global level and forestry in Ukraine, problems of forest conservation at the global and regional levels and sustainable use of forest resources.

Area of knowledge, specialty, academic programme, academic degree		
Educational degree	*Master*	
Specialization	*H4 Forestry*	
Educational program	*Forestry*	
Characteristics of the discipline		
Type	Mandatory	
Total number of hours	150	
Number of ECTS credits	5.0	
Number of modules	2	
Form of assessment	*Exam*	
Indicators of the discipline for full-time and part-time forms of university study		
	University study	
	Full-time	**Part-time**
Year of study	*1*	*1*
Term	*2*	*2*
Lectures	*30 hr.*	*8 hr.*
Practical classes and seminars	*15 hr.*	*8 hr.*
Laboratory classes	–	–
Self-study	*105 hr.*	*134 hr.*
Number of hours per week for full-time students	*3 hr.*	

1. Aim, competences and expected learning outcomes of the discipline

The aim of the discipline is to study the theoretical foundations of sustainable forestry development and master practical tools to ensure sustainable forest management.

The objectives of the course are:

study the theoretical foundations and practical mechanisms for achieving sustainable development;

analyze the relevance, content and strategic importance of the global sustainable development goals;

mastering the content of Global Goal 15 "Life on Land";

familiarization with global and regional trends in forestry development;

study of environmental, economic and social prerequisites for sustainable forestry development;

acquiring skills in the use of legislative, information, technological, economic and public tools to support sustainable forestry development and biodiversity conservation;

development of strategic thinking and skills in managing sustainable forestry processes.

As a result of studying the discipline, the student should

know:

– environmental prerequisites, global and regional prerequisites for achieving sustainable development;

– methods and techniques for analyzing the process of achieving global sustainable development goals;

– the content of global goal 15 "Life on Land" and the role of forests and forestry in achieving it, in particular in Ukraine;

– global and regional trends in land use development, including forestry;

– environmental, economic and social prerequisites for the development of sustainable forestry;

– indicators and criteria for sustainable forestry development;

– legal, informational, technological and economic instruments for ensuring sustainable forestry development and biodiversity conservation.

be able to:

– apply the acquired knowledge in practice in solving specific problems related to the management of sustainable forestry development;

– use international methodologies, statistical databases, application solutions and information resources to monitor the state of forests, biodiversity and the current state of forestry on the path to sustainable development;

– analyze criteria and indicators of sustainable forestry;

– to assess the impact of various types of land use, information technology, biotechnology development, forest certification and public activities on sustainable development.

Competences acquired:

Integral competence (IC):

– the ability to solve complex tasks and problems

in the field of forestry and hunting or in the process of learning, which involves research or innovation and is characterized by uncertainty of conditions and requirements.

Special (professional) competence (SC):

– ability to ensure sustainable development of forestry (SC 2);

– ability to evaluate regional peculiarities of natural and climatic conditions for the organization of effective forestry, fulfillment of various functions by forests and increase of forest areas (SC3);

– ability to carry out educational activities among the population to form their environmental thinking, consciousness and responsibility for the environment (SC6).

Expected learning outcomes (ELO):

– specialized conceptual knowledge that includes modern scientific achievements in the field of forestry and is the basis for original thinking, sustainable development and research (PLO1);

– communicate fluently orally and in writing in Ukrainian and foreign languages when discussing professional issues, research and innovation in the field of forestry (PLO2);

– to make effective decisions on forestry issues, including in difficult and unpredictable conditions; to predict its development; to identify factors that affect the achievement of goals; to analyze and compare alternatives; to assess risks and possible consequences of decisions (PLO3);

– manage complex activities in the field of forestry and in broader contexts, ensure quality, evaluate efficiency and effectiveness of activities (PLO5)

– to assess the state of forest phytocoenoses, forest resources in specific forest vegetation conditions, their potential, and to predict the possibilities of use (PLO6);

– to develop and implement scientific and applied projects in the field of forestry, taking into account available resources and risks, as well as economic, legal and environmental aspects (PLO7);

– develop and improve technological and production processes, implement modern digital technologies (PLO8);

– determine performance criteria and choose the optimal forestry strategy depending on external and internal conditions (PLO9);

– clearly and unambiguously communicate their own knowledge, conclusions and arguments on forestry and related issues to specialists and non-specialists, including students (PLO 10);

– to apply modern experimental and mathematical methods, digital technologies and specialized software to solve complex problems of forestry and hunting (PLO11).

2. Program and structure of the discipline

Names of content modules and topics	Number of hours												
	Full-time form							Part-time form					
	weeks	total	including					total	including				
			l	p	lab	ind	self		l	p	lab	ind	self
1	2	3	4	5	6	7	8	9	10	11	12	13	14
MODULE 1. SUSTAINABLE DEVELOPMENT													
Topic 1. What is Sustainable Forestry?	1	18	4	2			12	13					13
Topic 2. The Sustainable Development Goals	2	18	4	2			12	17	2	2			13
Topic 3. Goal 15: Life on land	3	17	4	2			11	17	2	2			13
Total for module 1	3	**53**	**12**	**6**			**35**	**47**	**4**	**4**			**39**
MODULE 2. SUSTAINABLE FOREST MANAGEMENT													
Topic 4. Criteria and indicators of sustainable forest management	4	20	4	2			14	23	2	2			19
Topic 5. Criteria and indicators for the conservation and sustainable management of temperate and boreal forests	5	40	8	4			28	41		2			39
Topic 6. Conservation and sustainable use of forests and forest biodiversity	6	37	6	3			28	39	2				37
Total for module 2	**5**	**97**	**18**	**9**			**70**	**103**	**4**	**4**			**95**
Total hours		**150**	**30**	**15**			**105**	**150**	**8**	**8**			**134**

2. Topic of lecture

№	Topic	Hours
1.	What is Sustainable Forestry?	4
2.	The Sustainable Development Goals	4
3.	Goal 15: Life on land	4
4.	Criteria and indicators of sustainable forest management	4
5.	Criteria and indicators for the conservation and sustainable management of temperate and boreal forests	8
6.	Conservation and sustainable use of forests and forest biodiversity	6

	Total	30

3. Topic of laboratory classes

№	Topic title	Number of hours
1	Analysis of Sustainable Development Goals	2
2	Challenges to the implementation Sustainable Development Goals	2
3	Goal 15: Life on land	2
4	Pan-European criteria and quantitative indicators for sustainable forest management	2
5	Using data from the global forest resources assessment	4
6	Using data from the Joint pan-European dataset	3
	Total	15

4. Topics of self-study

№	Topic title	Number of hours
1	Global Sustainability Beacons	35
2	Sustainable Forest Management Practices in Ukraine's Forestry	70
	Total	105

5. Methods of assessing expected learning outcomes

- examination;
- module tests;
- practical assignments.

6. Teaching methods:

- verbal method (lecture, discussion, interview, etc.)
- practical method (practical classes);
- work with educational and methodical literature (abstracting, summarizing, thesis, annotating, reviewing);
- independent work (completion of tasks).

The instructions for completing tasks are provided on Elearn online platform.

7. Results assessment

Lab assignments (6), self-study assignments (2), midterm tests (2), final exam.

8. Evaluation of knowledge

Evaluation of student knowledge is carried out on a 100-point scale and is converted to national grades according to the "Regulations and Examinations and Credits at NUBiP of Ukraine".

8.1. Distribution of grades by activities

Educational activity	Results	Assessment
Module 1. SUSTAINABLE DEVELOPMENT		
Practical assignment 1	***To know:*** environmental prerequisites, global and regional prerequisites for achieving sustainable development; methods and techniques for analysing the process of achieving global sustainable development goals; the content of global goal 15, "Life on Land", and the role of forests and forestry in achieving it, in particular in Ukraine. ***To be able*** to apply the acquired knowledge in practice in solving specific problems related to the management of sustainable development.	**15**
Practical assignment 2		**15**
Practical assignment 3		**20**
Self-study assignment 1		**20**
Module test 1		**30**
Total 1		**100**
Module 2. SUSTAINABLE FOREST MANAGEMENT		
Practical assignment 4	***To know:*** global and regional trends in land use development, including forestry; environmental, economic and social prerequisites for the development of sustainable forestry; indicators and criteria for sustainable forestry development; legal, informational, technological and economic instruments for ensuring sustainable forestry development and biodiversity conservation. ***To be able*** to use international methodologies, statistical databases, application solutions and information resources to monitor the state of forests, biodiversity and the current state of forestry on the path to sustainable development; to analyze criteria and indicators of sustainable forestry; to assess the impact of various types of land use, information technology, biotechnology development, forest certification and public activities on sustainable development.	**15**
Practical assignment 5		**20**
Practical assignment 6		**20**
Self-study assignment 2		**15**
Module test 2		**30**
Total 2		**100**
Total for year		**(M1 + M2)/2*0.7 ≤ 70**
Exam		**30**
Grand total		**(Total + Exam) ≤ 100**

8.2. Scale for assessing students' knowledge

Student rating, points	National grading
90-100	excellent
74-89	good
60-73	satisfactory
0-59	unsatisfactory

8.3. Assessment policy

Policy regarding deadlines and results:	Deadlines are set for all the assignments. Practical works submitted in violation of deadlines without a good reason will be penalized with a lower grade. Retakes of module tests in the presence of good reasons (e.g., sick leave) take place with the lecturer's permission.
Academic honesty policy:	Cheating during tests and examinations is strictly forbidden (including using mobile phones and tablets). All written works are

	checked for plagiarism and are allowed to be defended when the total share of properly referenced text is up to 20%.
Attendance policy:	Attendance is mandatory. For objective reasons (e.g.: sick leave, international internship) teaching can take place individually (online, under a warrant from the Institute's Director).

9. Teaching and learning aids

E-learning course of the discipline https://elearn.nubip.edu.ua/course/view.php?id=4647.

10. Recommended sources of information

– main

1. Lindenmayer, D.B., Margules, C.R. and Botkin, D.B. (2000), Indicators of Biodiversity for Ecologically Sustainable Forest Management. Conservation Biology, 14: 941-950. https://doi.org/10.1046/j.1523-1739.2000.98533.x
2. Ewald Rametsteiner, Markku Simula, Forest certification—an instrument to promote sustainable forest management?, Journal of Environmental Management, Volume 67, Issue 1, 2003, Pages 87-98,
3. Lakyda P., Shvidenko A., Bilous A., Myroniuk V., Matsala M., Zibtsev S., Schepaschenko D., Holiaka D., Vasylyshyn R., Lakyda I., Diachuk P., Kraxner F. Impact of Disturbances on the Carbon Cycle of Forest Ecosystems in Ukrainian Polissya. Forests. 2019. 10 (4). 337. doi.org/10.3390/f10040337
4. Myroniuk, V.; Bilous, A.; Khan, Y.; Terentiev, A.; Kravets, P.; Kovalevskyi, S.; See, L. Tracking Rates of Forest Disturbance and Associated Carbon Loss in Areas of Illegal Amber Mining in Ukraine Using Landsat Time Series. Remote Sens. 2020, 12, 2235. https://doi.org/10.3390/rs12142235
5. Лісотаксаційний довідник (доповнене видання) / уклад. А.М. Білоус, С.М. Кашпор, В.В. Миронюк, В.А. Свинчук, О.М. Леснік. – Київ : Видавничий дім «Вініченко», 2021. 420 с.

– additional

6. Matsala M., Bilous A., Myroniuk V., Diachuk P., Burianchuk M. & Zadorozhniuk R. (2021) Natural forest regeneration in Chernobyl Exclusion Zone: predictive mapping and model diagnostics, Scandinavian Journal of Forest Research, DOI: 10.1080/02827581.2021.1890816

Internet-sources

1. The Sustainable Development Goals https://www.un.org/sustainabledevelopment/sustainable-development-goals/ (дата звернення 01.05.2026 р.)
2. The Global Forest Resources Assessment : веб-сайт. URL: https://fra-data.fao.org/ (дата звернення 01.05.2026 р.).
3. The Joint pan-European dataset : веб-сайт. URL: https://fra-data.fao.org/WO/fra2020/home/ (дата звернення 01.05.2026 р.).
4. FAOSTAT : веб-сайт. URL: https://www.fao.org/faostat/en/?fbclid=IwAR1gJvWlSDv6y75RSpdn2fWK5vTKD9etO2JVOrC0YKtcUqU4RFlFa_a_xss#data (дата звернення 01.05.2026 р.).
5. Restor : веб-сайт. URL: https://restor.eco/ (дата звернення 01.05.2026 р.).
6. Закон України «Про оцінку впливу на довкілля»: веб-сайт. URL: https://zakon.rada.gov.ua/laws/show/2059-19#Text (дата звернення 01.05.2026 р.).
7. Екозагроза: веб-сайт. URL: https://ecozagroza.gov.ua/ (дата звернення 01.05.2026 р.).