

**Thematic Plan of Seminar Classes for the course
“Pharmaceutical Ecology” for students
admitted in 2023 in the educational program 33.05.01 Pharmacy,
specialization (profile): Pharmacy (Specialist Degree Program),
full-time mode of study for the 2026–2027 Academic Year**

No.	Thematic blocks	Hours (academic)
Semester 7		
1	History of ecology.	2
2	The organism as a living, integrated system. Levels of biological organization as objects of study in ecology. Trophic levels: concept and ecological functions.	2
3	Physical and chemical environmental factors in the life of organisms, role and significance.	2
4	Main habitats (aquatic, terrestrial-air, soil, living organisms) and environmental factors.	2
5	Adaptation of organisms to the environment and living conditions.	2
6	Population and population interactions.	2
7	Biocenosis as a multispecies biological system.	2
8	Ecological systems. Ecosystem homeostasis.	2
	Ecological systems. Biological productivity and ecosystem dynamics.	2
9	The biosphere and man's place in it.	2
10	Biosocial nature of man and ecology.	2
11	Human population characteristics.	2
12	Agricultural ecosystems (agroecosystems).	2
13	Industrial-urban ecosystems.	2
14	The influence of natural and environmental factors on human health.	2
15	Man and the environment.	2
16	Ecology of nutrition. Xenobiotics in food products.	2
Semester 8		
17	Characteristics of biologically active supplements (BAS), analysis of individual ingredients of dietary supplements, determination of safety and use.	2
18	Wastewater sampling and determination of physicochemical properties of water. Part 1.	2
	Wastewater sampling and determination of physicochemical properties of water. Part 2.	2
19	Determination of organoleptic properties of water.	2
20	Sampling of atmospheric air, determination of organoleptic and physicochemical properties and gaseous air pollutants.	2
21	Radioactive contamination of the ground layer of the atmosphere, soil, and water systems. Radiation doses. Units of radioactivity. Impact on the environment and the human body.	2
22	Chemical and pharmaceutical enterprises as sources of environmental pollution.	2
23	Soil pollution. Waste disposal problems.	2
24	Rules for the disposal of waste from medicines, medical products and medical equipment.	2

25	Placement and storage of waste from chemical and pharmaceutical enterprises.	2
26	Quality management system, in-house quality control of physicochemical analysis results, and reliability of test results – Modern aspects. Part 1.	2
	Quality management system, in-house quality control of physicochemical analysis results, and reliability of test results – Modern aspects. Part 2.	2
27	Environmental Monitoring. Environmental Risk, Assessment, and Management. Part 1.	2
	Environmental Monitoring. Environmental Risk, Assessment, and Management. Part 2.	2
28	Industrial environmental control program, procedure and deadlines for submitting a report on the organization and results of industrial environmental control.	2
29	Ecological resources of medicinal plants of the northwestern Caspian region (based on the Volgograd region model): characteristics, use, protection and reproduction.	2
30	Excursion "Diversity of spore and gymnosperm plants of the Botanical Garden of the Volgograd State Pedagogical University.	2
31	Environmental problems of the Volgograd region, solutions – round table.	2
	Total	70

Reviewed and approved at the meeting of the Department of General Hygiene and Ecology of the N.P. Grigorenko Institute of Public Health, Minutes No.10, dated May 29th, 2026.

Head of the Department

____ N.I. Latyshevskaya