

Discipline designation	Ecology and Environmental Protection
Semester(s) in which the discipline is taught	6
Teacher in charge	Mavlonov Xudargan, Doctor of Biological Sciences, Acting Professor Kadyrova Surayya Karshiboevna, senior teacher Abdurakhmonova E'zoza Qahramon kizi, intern teacher
Teaching language	Uzbek
Connection to the curriculum	Elective
Academic workload (including contact hours, SsIW)	Total workload: 180 hours Contact hours – Lecture 30 h Practical work 40 hours. laboratory -20 h SsIW - 90 hours.
ECTS	6
Prerequisites	Geobotany, medicinal plants of Uzbekistan, Botany, zoology, biotechnology, general microbiology
Discipline aims:	<p>The purpose of the discipline is to form a holistic understanding of the environment as a sphere of active interaction between man and nature, mastery of basic environmental knowledge and the fundamentals of environmental protection and rational use of natural resources, as well as providing knowledge and skills in the field of environmental management and environmental protection</p> <p>Learning outcomes</p> <ul style="list-style-type: none"> - list and classify sources of environmental pollutants and measures to neutralize them; - name, highlight and classify anthropogenic impacts on the biosphere, global environmental problems and ways to solve them; -define and highlight environmental principles of rational environmental management and environmental protection; - know the general issues and problems of ecology and the environment, the role and scale of environmental disasters, including the use of this knowledge in various spheres of human life; - determine the significance of the processes of adaptation of living organisms to the environment (to the influence of environmental factors), refer to human adaptation to environmental factors; - determine and highlight the principles of organization, functioning and conditions for the sustainability of ecosystems and the biosphere; - critically evaluate environmental activities from a historical perspective; - distinguish between the foundations of environmental culture and environmental law; - evaluate international and Uzbek legislation in the field of ecology and nature conservation; opportunities for international cooperation in the field of environmental protection; - demonstrate knowledge of safety rules during practical work and in the field; - explain the theoretical foundations of environmental monitoring, regulation and reduction of environmental pollution, technogenic systems and environmental risk; - discuss legal, moral and ethical foundations and norms in the field of environmental management and environmental protection;

	<ul style="list-style-type: none"> - formulate scientific hypotheses when discussing literature and own data - use the necessary language tools, tactics and strategies to solve communicative problems in the academic and professional spheres; - work with educational and scientific texts of different levels of complexity that meet the tasks of professional activity - systematize materials according to composition, properties and place of growth
Class contents	<p>Contents:</p> <ol style="list-style-type: none"> 1. Purpose, objectives, industries, history of development and methods of research in ecology and environmental protection. 2. Organism and environment 3. Organism and environment 4. Populations and biocenoses 5. Ecological systems 6. Fundamentals of the ecosphere and human ecology. Environment and human health. 7. Natural ecosystems of the Earth 8. Anthropogenic impact on the atmosphere, hydrosphere and lithosphere. 9. Anthropogenic influence on biotic associations. Special types of environmental impact. Ecological crisis and destruction. 10. Environmental quality and rational use of natural resources, principles of environmental protection. Atmospheric protection. 11. Protection of the hydrosphere and lithosphere 12. Protection of biotic communities, the "Red Book" and protected natural areas. Protection of the environment from certain types of impact. 13. Fundamentals of industrial (technical) and agricultural ecology. Fundamentals of environmental (environmental) law and green economy. 14. Fundamentals of environmental consciousness, education and culture 15. Fundamentals of sustainable development. International cooperation in the field of environmental management and environmental protection.
Examination type	In written form
Teaching and examination requirements	<p>Requirements for successful mastering the disciplines</p> <p>To have a complete mastery of theoretical and methodological concepts of the subject, to be able to reflect correctly the results of analysis, to think critically about the studied processes and perform tasks during daily, midterm forms of evaluation, to pass written final assessment (FA).</p> <p>Deviations from the discipline program content are not allowed in making up final assessment questions. The bank of FA questions for each subject is discussed at the department meeting and approved by the head of the department.</p> <p>FA question bank is used in compiling FA tickets; the number (3-5 questions) of questions in the task sheet should be in a 50/50 ratio, depending on the content of classroom and independent learning.</p> <p>No later than 1 week before the start of the final control, task sheets are signed by the head of the department, enclosed in an envelope, sealed by the dean's office and opened 5 minutes before the start of the exam in the presence of students. FA duration is 80 minutes. Answers to FA questions are recorded in notebooks with the seal of the dean's office. After completion of the FA work, it is immediately encrypted by a representative of the dean's office, and the notebooks are handed over to the commission for verification. From the moment of completion of the FA, a period of 72 hours is allotted for checking and posting the results on the electronic platform.</p>

	<p>The teacher who taught the subject is not involved in the process of the exam or checking the students' answers.</p> <p>Students who are dissatisfied with the FA results may submit a written or oral appeal within 24 hours after the publication of the FA results. Complaints submitted after 24 hours from the publication of the FA results will not be accepted.</p>
References:	<p>Khozhanazarov U.E. Ecology and environmental protection. Textbook. – Tashkent, TDPU, 2020. – 212 p.</p> <p>Avazov Sh., Saydamatov F. Ecology and environmental protection. Textbook. - T.: “ILM ZIYO”, 2017. - 232 p.</p> <p>Yakubzhanova Sh.T., Ishmo’minov B.B. Ecology and environmental protection. Textbook for practical exercises. - T.: “BOOKMANI PRINT”, 2022. – 168 p.</p> <p>Novikova, V. B. Ecology and environmental protection. Part 1 [Electronic resource]: textbook / V. B. Novikova, S. O. Potapova; Krasnoyarsk State Agrarian University. – Krasnoyarsk, 2023. – 210 p.</p>
Scope of assessment criteria and procedure	<p>CURRENT CONTROL</p> <p>Purpose: Determining and assessing the student's level of knowledge, practical skills, and competencies on course topics.</p> <p>Instructions: The student's activity in daily classes is assessed through the student's mastery of course topics, as well as constructively interpreting and analyzing the educational material, developing module-specific skills, acquiring practical skills (in terms of quality and the specified number) and competencies, solving problem situations aimed at applying professional practical skills, working in a team, preparing presentations, etc.</p> <p>Current control form:</p> <ul style="list-style-type: none"> Activity in lessons Preparing educational materials Working with sources within the subject Using educational technologies Working in a team Preparing presentations Working with projects <p>INTERMEDIATE CONTROL</p> <p>Purpose: Assessing the student's knowledge and practical skills and level of mastery of lecture material after completing the relevant section of the course.</p> <p>Form and procedure of intermediate control: Midterm examination is held during the semester during the training sessions after the completion of the relevant module of the curriculum of the subject. Midterm examination is held once in written form within the framework of this subject. Midterm examination questions cover all topics of the subject.</p> <p>Independent learning:</p> <p>Purpose: Independent learning is aimed at fully covering the content of this course, expanding the theoretical knowledge acquired, and establishing independent learning activities for students.</p> <p>Form and procedure of independent education: Independent work assignments are completed in the form of an educational project, presentation, case study, problem solving, information search, digest, colloquium, essay, article, abstract, etc.</p> <p>Completed assignments for independent study are placed in the electronic system and checked based on the anti-plagiarism program and evaluated by the subject teacher.</p>

In this case, the uniqueness of the completed assignment should not be less than 60%, otherwise the assignment will not be accepted for assessment.

The number of independent work assignments, depending on the nature of the subject, should not be less than 3 for one subject (module).

Independent work assignments account for 60% of the points allocated for current and intermediate control.

Independent learning task 1: Preparation of project work based on independent learning topics

Independent learning task 2: Preparing sample video lessons based on specialized subject topics.

Independent learning task 3: Preparation of open lesson plans in specialized subjects using interactive methods.

Independent learning task 4: Analysis of educational normative documents for specialized subjects and preparation of presentations.

FINAL CONTROL

Purpose: The final examination is held at the end of the semester to determine the level of mastery of the student's theoretical knowledge and practical skills in the relevant subject. The final examination is held at a specified time according to the examination schedule created by the Registrar's Office on the electronic platform.

Requirements: The student must have passed the current control, intermediate control and independent learning assignments by the deadline for the final control type in the relevant subject.

A student who has not passed the current control, intermediate control and independent learning assignments, as well as who has received a score in the range of "0-29.9" for these assignments and control types, is not included in the final control type.

Also, a student who has missed 25 percent or more of the classroom hours allocated to a subject without a reason is excluded from this subject and is not included in the final control type and is considered not to have mastered the relevant credits in this subject.

A student who has not passed or was not included in the final control type and has received a score in the range of "0-29.9" for this type of control is considered to be an academic debtor.

Final control form: The final examination in this subject will be conducted in written form.

If the final examination is conducted in written form, the requirements for assessment must also be reflected.

Criteria for assessing student knowledge	5 stars	100 points		Evaluation criteria
	5	90-100	Excellent	When a student is considered to be able to make independent conclusions and decisions, think creatively, observe independently, apply the knowledge he has gained in practice, understand, know, express, and narrate the essence of the subject (subject), and have an idea about the subject (subject)
	4	70-89,9	Good	When the student is considered to be able to observe independently, apply the knowledge he has gained in practice, understand, know, express, and narrate the

				essence of the subject (subject), and has an idea about the subject (subject)		
	3	60-69,9	Satisfactory	When the student is found to be able to apply the knowledge he has gained in practice, understands, knows, can express, and narrate the essence of the subject (subject), and has an idea about the subject (subject)		
	2	0-59,9	Unsatisfactory	When it is determined that the student has not mastered the science program, does not understand the essence of the science (subject), and does not have an idea about the science (subject)		
Course evaluation criteria and procedure	Control type		Total points allocated	Control (task) form	Distribution of points	Qualifying score
	Current control		30 points	System tasks	20 points (divided by the number of tasks)	18 points
				Student activity (in seminars, practical, laboratory classes)	10 points	
	Intermediate control		20 points	Supervision: Written work	10 points	12 points
				System tasks	10 points (divided by the number of tasks)	
	Final inspection		50 points	Written assignment (5 questions)	50 points (10 points per question)	30 points
	<p><i>* Note: 60% of the points allocated for current and intermediate control are allocated to independent work assignments. Independent work assignments are evaluated as system assignments through the electronic platform.</i></p>					