

Discipline designation	Entomology
Semester(s) in which the discipline is taught	8
Responsible teacher	Sanayeva Lola Shukurboyevna, biology sciences candidate, associate professor. Soliyeva Gulnoza Daniyarovna , Biology science teacher Rakhimova Malokhat Anvarovna, Biology science teacher.
Language of instruction	Uzbek
Connection to the curriculum	Subject of choice
Study load (including contact hours, SRS)	Total workload: 120 h Contact hours – Lecture 30 h practical -30 Self-Study of Students 60 h
ECTS	4
Prerequisites	Zoology, Botany.
Goals of the discipline	<p>The purpose of the discipline is to study the features of the organization and biology of insects, consider general issues of insect ecology, become familiar with the most important pests of agriculture and forestry and the main areas of plant protection</p> <p>Learning outcomes</p> <ul style="list-style-type: none"> - discuss the features of morphology, anatomy, physiology; - distinguish between the methods of reproduction, development, origin of insects and their biodiversity; - compare structural features and behavior; - have an understanding of the individual and historical patterns of development that determine the formation of knowledge on the history of the study of insect ecology and pest control; - must have the ability to form concepts such as environmental factors, concepts about the population, living conditions of insects (qualification). - establish the ecological role of harmful and beneficial groups of insects in communities and ecosystems; - assess the mechanisms and directions of changes in living components of natural communities under the influence of insects; - develop skills of independent analytical and research work; - use the acquired theoretical knowledge in practice; - develop skills in working with educational and scientific literature. - use laboratory equipment and instruments; - comply with safety standards and regulations when conducting entomological research.
Contents of the lesson	<p>Content</p> <ol style="list-style-type: none"> 1.Goals, objectives and history of the development of entomology 2. Morphology of insects 3. Mouthparts of insects and relationship with living conditions 4.Anatomy and physiology of insects 5. Reproduction and development of insects 6. The main orders of insects with incomplete metamorphosis 7. The main orders of insects with complete metamorphosis 8. The influence of environmental factors on the reproduction, development and distribution of insects

	<p>9.Feeding characteristics and food specialization of insects</p> <p>10.Omnivorous pests</p> <p>11.Insects – pests of fruit trees</p> <p>12.Main crop pests</p> <p>13. Wood pests and their biodiversity</p> <p>14. Pests of vegetables and melons</p> <p>15.Measures to protect plants from pests</p>
Exam form	Oral.
Training and examination requirements	<p>It is necessary to have full knowledge of theoretical and practical concepts related to the study of insects, their characteristics and way of life, the ability to correctly reflect the results of analysis, independent observation of the objects being studied, the creation and implementation of tasks given in current and intermediate forms of control, as well as during the final control , delivery of practical and independent work. Pass the exam orally according to the final control.</p> <p>When creating IC questions, deviations from the content of the discipline program are not allowed. The bank of IC questions for each subject is discussed at the meeting and approved by the head of the department.</p> <p>When compiling IR tickets, the IR question bank is used; the number of questions in the ticket 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, tickets approved by the head of the department, enclosed in an envelope, are sealed by the dean's office and opened 5 minutes before the start of the exam in the presence of students.</p> <p>The student who has chosen the IC ticket is given 5-10 minutes to prepare and 10-15 minutes to answer IC questions orally. On average, 20 minutes are spent per student.</p> <p>When forming the composition of the oral examination commission, 1 commission member is approved for every 15 students. The student's IR grade is posted on the electronic platform on the same day.</p> <p>Student(s) who are dissatisfied with the IC results may submit a written or oral appeal within 24 hours of the publication of the IR results. Complaints submitted after 24 hours from the publication of the EC results will not be accepted.</p> <p>The teacher who taught the students in this subject is not involved in the process of conducting the exam and checking the students' answers.</p>
Bibliography	<p>1. Mavlonov O., Saparov K., Toshmanov N. ZOOLOGIYA (umurtqasiz hayvonlar). biologiya o'qitish metodikasi bakalavr ta'lim yo'nalishi talabalari uchun darslik. Sano-standart nashriyoti. Toshkent-2018.</p> <p>2. Dadaev S., Saparov K. Umurtqasizlar zoologiyasi o'quv predmetidan laboratoriya mashg'ulotlari. Pedagogika oliy o'quv yurtlari bakalavriat bosqichining 5110400- Biologiyani o'qitish metodikasi ta'lim yo'nalishi talabalari uchun o'quv qo'llanma. Toshkent. Navro'z nashriyoti. 2020.</p> <p>3. Dadaev S., Umurtqasizlar zoologiyasi o'quv predmetidan amaliy mashg'ulotlar. Oliy o'quv yurtlarining bakalavriat bosqichi biologiya yo'nalishi talabalari uchun o'quv qoo'lanma. Toshkent. Navro'z nashriyoti. 2020.</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</p>

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.

Current control form:

Activity in lessons

Preparing educational materials

Working with sources within the subject

Using educational technologies

Working in a team

Preparing presentations

Working with projects

INTERMEDIATE CONTROL

Purpose: Assessing the student's knowledge and practical skills and level of mastery of lecture material after completing the relevant section of the course.

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.

Independent learning:

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.

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.

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.

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

	<p>the final control type in the relevant subject.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Final control form: The final examination in this subject will be conducted in written form.</p> <p>If the final examination is conducted in written form, the requirements for assessment must also be reflected.</p>					
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
	<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>				