

Name of the Discipline	Zoology
Semester(s)	6
Responsible teacher	Sanayeva Lola Shukurboyevna, biology sciences candidate, associate professor. Soliyeva Gulnoza Daniyarovna , Biology science teacher Abdurakhmonova E'zoza Qahramon kizi, intern teacher
Language of teaching/learning	Uzbek
Connection to the curriculum	Compulsory
Forms of teaching/learning	Lecture and practical
Academic workload (including contact hours and self-study)	Total workload: 120 h Contact hours – Lectures 30 h Laboratory 20 practical 10 IWS 150 hours
ECTS	4
Prerequisites	Biology, Chemistry, Physics, Geography
Discipline objectives / Learning Outcomes	<p>The purpose of the discipline is to study the patterns of manifestations of animal life and the diversity of the animal world, the structure and vital activity of animals.</p> <p>Learning Outcomes:</p> <ul style="list-style-type: none"> - determine the role of Zoology in the formation of the modern Natural Science picture of the world, its place in the system of Natural Sciences; - have an idea of the structural features of the integument and their derivatives, muscles, skeleton, digestive, respiratory, circulatory, excretory, reproductive, and nervous systems; - recognize different levels of animal organization - from protozoa to higher chordates; - determine the relationship, common origin and evolution of various groups of invertebrate and vertebrate animals; - know the features of the formation of the structure of animals in Phylogenesis and Ontogenesis; - track phylogenetic relationships of various groups of animals; - compare the features of the structure and functioning of organs and systems of various groups of animals; - possess the techniques of a comparative anatomical approach, the skills of identifying animals, their organs and systems; - master the skills of working with laboratory equipment and animal preparations; - describe and explain the results of experiments; - carry out practical work and draw conclusions from it; - use the knowledge gained from studying Zoology in professional activities; - formulate scientific hypotheses when discussing literature and own data; - work with educational and scientific texts that meet the tasks of professional activity.

Lessons' contents	<p>Content</p> <p>Contents</p> <ol style="list-style-type: none"> 1. Introduction to Zoology. Objects, subject, purpose, objectives and history of the development of Zoology. 2. Acquaintance with invertebrates. 3. Protozoology. Amoeboid protozoa and phylum Euglenozoa 4. Types of Chlorophytes. Volvox class. Class Kinetoplastida. Opaline subtype. 5. Alveolate type 6. Ciliary subtype 7. Types of Microsporidia, Microsporidia. Phylogeny of unicellular animals. 8. Structure, reproduction, development, classification and origin of multicellular animals. Lower multicellular organisms 9. Subsection Eumetazoans. Section radially symmetrical. Types Coelenterates and Ctenophores 10. Subtype Mesozoic: types Orthonectida and Orthoniectidae and Dicyemida. Type of flatworms. Class Ciliated worms 11. Class Flukes. Flukes that parasitize humans and productive animals. 12. Classes of Monogenea and Tapeworms. 13. Type of roundworms. Classes Gastrotricha and Nematodes. 14. Classes Hairworms, Rotifers, Kinorhynchs, Priapulids 15. Type Acanthocephalans (Spiny-headed) and Nemertean 16. Type annelids. Class Polychaetes. 17. Belt subtype. Classes Oligochaetes and Leeches. 18. Class Primary Annelates. Types Echiurida and Sipunculida. Significance and phylogeny of annelids. 19. General characteristics and taxonomy of the type Mollusks. Subtype Amphineura. Classes Shell-Less and Chitons. Subtype Shells. Class Gastropods 20. Classes Bivalves, Scaphopoda and Cephalopoda. 21. Types of Onychophora and Tardigrade. General characteristics and taxonomy of Arthropods. General characteristics and classification of subtypes Trilobite and Crustacean. 22. Higher Crustaceans. General characteristics and taxonomy of the subtype Chelicerata 23. Classes Arachnids and Sea Spiders. 24. General characteristics and taxonomy of the Tracheal subtype. Superclass Centipedes. General characteristics of Six-legged or Insects 25. Structure, reproduction and development of insects 26. Classification of the superclass Insects. 27. The main orders of insects with incomplete metamorphosis (continued). The main orders of insects with complete metamorphosis. 28. The main orders of insects with complete metamorphosis. Harmful insects and their control. Phylogeny of arthropods. General characteristics and diversity of Gnathostomulids. Types Rotifera, Camptozona and Cycliophara. 29. Subtype Lophotrochozoa. Phyla Phoronida, Brachiopoda, Bryozoa, Chaetognatha. Types Tentacled and Pogonophora. 30. Supertype Deuterostomes. General characteristics and taxonomy of the phylum Echinodermata. Phylogeny of echinoderms.
The exam format	<i>Written</i>

Teaching/learning and examination requirements	<p>Full acquire of theoretical and methodological concepts related to Zoology, the ability to correctly reflect the results of analysis, independent observation of the processes and concepts being studied, completing tasks given in current, intermediate forms of control and final control. Pass the exam orally according to the final control.</p> <p>In creating Final Exam questions, deviations from the content of the discipline program are not allowed. The bank of Final Exam questions for each discipline is discussed at the meeting and approved by the head of the department.</p> <p>When compiling Final Exam question cards, the Final Exam question bank is used; the number of questions in the card 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, Question cards 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 Final Exam card is given 5-10 minutes to prepare and 10-15 minutes to answer Final Exam questions orally. On average, 20 minutes are spent per student.</p> <p>In forming the composition of the oral examination commission, 1 commission member is approved for every 15 students. The student's Final Exam grade is posted on the electronic platform on the same day.</p> <p>Student(s) who are dissatisfied with the Final Exam results may submit a written or oral appeal within 24 hours of the publication of the Final Exam results. Complaints submitted after 24 hours from the publication of the Final Exam results will not be accepted.</p> <p>The teacher who taught the students in this discipline is not involved in the process of conducting the exam and checking the students' answers.</p>
Bibliography	<ol style="list-style-type: none"> 1. Mavlonov O., Saparov K., Toshmanov N. ZOOLOGIYA (umurtqasiz hayvonlar). 5110400-biologiya o'qitish metodikasi bakalavr ta'lim yo'nalishi talabalari uchun darslik. Sano-standart nashriyoti. Toshkent-2018. 2. Dadayev S., Saparov K. Umurtqalilar zoologiyasi. Oliy o'quv yurtlari biologiya ixtisosligi bakalavriat bosqichi biologiya yo'nalishi talabalari uchun darslik. Toshkent, «TURON-IQBOL». 2019, 720 b. 3. 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. 4. Зоология беспозвоночных : учеб. пособие для вузов / С. Ю. Кустов, В. В. Гладун. — 2-е изд., пер. и доп. — М. : Издательство Юрайт, 2019. — 271 с. 5. Козлов С. А., Сибен А.Н., Лящев А.А. Зоология / Учебное пособие для вузов. 4-е изд., 2023, 328 с.